

# Oracle® Application Express

Release Notes

Release 5.0

E39143-04

August 2015

---

These *Release Notes* contain important information not included in the Oracle Application Express documentation.

**Tip:** For a summary of new Oracle Application Express release 5.0 features, see "Changes in This Release" at the start of each document. To access the Oracle Application Express Release 5.0 Oracle Help Center, go to [https://docs.oracle.com/cd/E59726\\_01/index.html](https://docs.oracle.com/cd/E59726_01/index.html)

- [Before You Begin](#)
- [Configuration Requirements](#)
- [New Features](#)
- [Changed Behavior](#)
- [Deprecated Features](#)
- [Desupported Features](#)
- [Open Bugs and Known Issues](#)
- [Documentation Accessibility](#)

## Before You Begin

- [About Checking for the Most Current Release](#)
- [About Upgrading to the Latest Oracle Application Express Release](#)
- [Determining Your Oracle Application Express Release Version](#)
- [Important Information if Updating from a Previous Release](#)
- [Important Information if Using Oracle Workspace Manager in an Oracle Database](#)
- [Important Information if Upgrading from Oracle Database Version 12c CDB](#)

## About Checking for the Most Current Release

Oracle Application Express is released more frequently than the Oracle Database. To view information about or download a more current release, see:

<http://www.oracle.com/technetwork/developer-tools/apex/downloads/index.html>

## About Upgrading to the Latest Oracle Application Express Release

If you already have Oracle Application Express installed, Oracle strongly recommends that you regularly upgrade to the latest version available. To learn more about see "Upgrading from a Previous Oracle Application Express Release" in *Oracle Application Express Installation Guide*.

## Determining Your Oracle Application Express Release Version

To determine which release of Oracle Application Express you are currently running you can either:

- View the release number on the Workspace home page
  - Sign in to Oracle Application Express.  
The Workspace home page appears. The current release version displays in bottom right corner.
- View the About Application Express page:
  - Sign in to Oracle Application Express.  
The Workspace home page appears.
  - Click the **Help** menu at the top of the page and select **About**.  
The About Application Express page appears.

**See Also:** "Signing In To Oracle Application Express" in *Oracle Application Express Application Builder User's Guide*

## Important Information if Updating from a Previous Release

If you are updating from previous Oracle Application Express, See "Changed Behavior" in *Oracle Application Express Release Notes* release 4.2, *Oracle Application Express Release Notes* release 4.1 and *Oracle Application Express Release Notes* release 4.0.

You can find these documents at the following locations:

*Oracle Application Express Release Notes* release 4.2:

[https://docs.oracle.com/cd/E37097\\_01/index.htm](https://docs.oracle.com/cd/E37097_01/index.htm)

*Oracle Application Express Release Notes* release 4.1:

[https://docs.oracle.com/cd/E23903\\_01/index.htm](https://docs.oracle.com/cd/E23903_01/index.htm)

*Oracle Application Express Release Notes* release 4.0:

[https://docs.oracle.com/cd/E17556\\_01/index.htm](https://docs.oracle.com/cd/E17556_01/index.htm)

## Important Information if Using Oracle Workspace Manager in an Oracle Database

If your database uses Oracle Workspace Manager, you must download the patch for Bug 11061801 from My Oracle Support and apply it to your database prior to attempting the install. To locate this patch, search for **11061801** on the Patches tab.

## Important Information if Upgrading from Oracle Database Version 12c CDB

If you are upgrading an Oracle Database 12c Release 1 (12.1) multitenant container database (CDB), you must download the patch for Bug 20618595 from My Oracle Support and apply it to your database. To locate this patch, search for **20618595** on the Patches tab.

## Configuration Requirements

The value of the character set portion of `PlsqlNLSLanguage` in the configuration of the `mod_plsql` Database Access Descriptor (DAD) must be set to `AL32UTF8`, regardless of the underlying database character set.

The Database Access Descriptor now contains a parameter for `PlsqlRequestValidationFunction`. The purpose of this parameter is to limit the number of procedures which can be invoked through `mod_plsql`. By default, the only procedures permitted are the public entry points of Oracle Application Express. This can be extended using the validation functions shipped with Oracle Application Express. To learn more, see "Restricting Access to Oracle Application Express by Database Access Descriptor (DAD)" in *Oracle Application Express Administration Guide*.

Enabling the `PlsqlRequestValidationFunction` for a Database Access Descriptor may cause existing applications which relied upon publicly executable procedures to fail. You may choose to either omit the `PlsqlRequestValidationFunction` from the Database Access Descriptor definition, or follow the recommended approach of extending the supplied validation function.

## New Features

This section describes new features in Oracle Application Express release 5.0. These are new features that are not present in Oracle Application Express release 4.2 and earlier releases.

- [Page Designer Integration Development Environment \(IDE\)](#)
- [Flexible Workspace Authentication](#)
- [Pivot View in Interactive Reports](#)
- [Modal Dialog Support](#)
- [Allow Multiple Interactive Reports on One Page](#)
- [New jQuery Mobile Smartphone and Tablet Themes](#)
- [Application Express Release 5.0 Universal Theme](#)
- [Improvements to Authorizations](#)
- [Improved Label Accessibility](#)
- [Fixed Headings in Interactive Reports](#)
- [Improvements to Flash Charts](#)

## Page Designer Integration Development Environment (IDE)

Page Designer is a new IDE for enhancing and maintaining pages. With Component View and Tree View, you need to continually open new dialogs to update components.

With Page Designer, there is a Tree pane, Grid Layout and Property Editor which are synchronized and enable you to update any attributes without leaving Page Designer.

Component View and associated edit pages are still available for use. However, Oracle strongly encourages you to try Page Designer to take advantage of the significant productivity enhancements it offers.

**Note:** If you are using Page Designer, either with a keyboard-alone or a screen reader such as JAWS, Oracle strongly recommends that you use the Rendering tree in the left pane, instead of the Grid Layout pane. The tree widgets used for the left pane are coded as accessible tree widgets, coded to the WCAG 2.0 and WAI-ARIA guidelines, and as a result offer a more predictable and consistent user experience for such users, than is available through the Grid Layout.

### Classic Report Column Property Naming Differences

Table 1 describes property naming differences between Component View and Page Designer for classic report columns.

**Table 1 Classic Report Column Property Naming Differences**

Component View	Page Designer
Display As = Standard Report Column	Type = Plain Text
Show Column = Yes	Escape Special Characters = No
Display As = Standard Report Column	Type = Hidden Column
Show Column = No	Escape Special Characters = No
Display As = Display as Text (based on LOV, does not save state)	Type = Plain Text (based on List of Values)
Show Column = Yes	
Display As = Display as Text (based on LOV, does not save state)	Type = Hidden
Show Column = No	Escape Special Characters = No
Display As = Display as Text (saves state)	Type = * Display as Text (saves state) [Deprecated]
Display As = Display as Text (escape special characters, does not save state)	Type = Plain Text
Show Column = Yes	Escape Special Characters = Yes
Display As = Display as Text (escape special characters, does not save state)	Type = Hidden Column
Show Column = No	Escape Special Characters = Yes
Display As = Date Picker (Classic)	Type = * Date Picker (Classic) [Deprecated]
Display As = Date Picker	Type = * Date Picker [Deprecated]
Display As = Text Field	Type = * Text Field [Deprecated]
Display As = Text Area	Type = * Text Area [Deprecated]
Display As = Select List (static LOV)	Type = * Select List [Deprecated]
Display As = Select List (named LOV)	Type = * Select List [Deprecated]
Display As = Select List (query based LOV)	Type = * Select List [Deprecated]
Display As = Radio Group (static LOV)	Type = *Radio Group [Deprecated]

**Table 1 (Cont.) Classic Report Column Property Naming Differences**

<b>Component View</b>	<b>Page Designer</b>
Display As = Radio Group (named LOV)	Type = *Radio Group [Deprecated]
Display As = Radio Group (query based LOV)	Type = *Radio Group [Deprecated]
Display As = Hidden	Type = * Hidden Field [Deprecated]
Display As = Popup LOV (named LOV)	Type = * Popup LOV [Deprecated]
Display As = Popup LOV (named LOV)	Type = * Popup LOV [Deprecated]
Display As = Popup LOV (query based LOV)	Type = * Popup LOV [Deprecated]
Display As = Popup Key LOV (named LOV)	Type = * Popup Key LOV [Deprecated]
Display As = Popup Key LOV (query based LOV)	Type = * Popup Key LOV [Deprecated]
Display As = Simple Checkbox	Type = * Simple Checkbox [Deprecated]
HTML Expression is defined	Type = Plain Text
Column Link is defined	Type = Link
HTML Expression is not defined	
Number / Date Format starts with 'PCT_GRAPH:'	Type = Percent Graph
Number / Date Format starts with 'IMAGE:'	Type = Display Image
Number / Date Format starts with 'DOWNLOAD:'	Type = Download BLOB

**Interactive Report Column Property Naming Differences**

[Table 2](#) describes property naming differences between Component View and Page Designer for interactive report columns.

**Table 2 Interactive Report Columns Property Naming Differences**

<b>Component View</b>	<b>Page Designer</b>
Display As = Standard Report Column	Type = Plain Text Escape Special Characters = No
Display As = Display as Text (escape special characters)	Type = Plain Text Escape Special Characters = Yes
Display As = Display as Text (based on LOV, escape special characters)	Type = Plain Text (based on List of Values)
Display As = Remove HTML and escape special characters	Type = Remove HTML (Escapes, attribute not exposed)
Display As = Hidden	Type = Hidden Column (Escapes, attribute not exposed)
HTML Expression is defined	Type = Plain Text
Column Link is defined	Type = Link

**Table 2 (Cont.) Interactive Report Columns Property Naming Differences**

<b>Component View</b>	<b>Page Designer</b>
Number / Date Format starts with 'PCT_ GRAPH:'	Type = Percent Graph
Number / Date Format starts with 'IMAGE:'	Type = Display Image
Number / Date Format starts with 'DOWNLOAD:'	Type = Download BLOB

## Flexible Workspace Authentication

When defining administrators and developers within the Application Builder, this feature allows the definition of authentication schemes. In Oracle Application Express 4.2, all users must be defined using Application Express User authentication. This feature allows instance administrators to define different authentication schemes such as Single Sign-On (SSO), LDAP, and so on. See "Editing Development Environment Authentication Scheme" in *Oracle Application Express Administration Guide*.

## Pivot View in Interactive Reports

This feature is a new end user interactive report capability to define pivot reports. End users select the pivot column(s) and row(s) and then provide the function(s) to be represented in the pivot report. Pivot reports are displayed as a new icon in the Actions Bar in a similar way as charts and group by are represented by icons.

**Note:** For applications that existed before the Oracle Application Express release 5.0 upgrade, you can use the Upgrade Application Wizard to enable pivot report. "Upgrading Applications to Include New Components" in *Oracle Application Express Application Builder User's Guide*.

## Modal Dialog Support

This feature introduces the ability to create a page as a modal or non-modal page. A modal page does not allow the end user to select the underlying page (the page is greyed out), whereas, they can select the underlying page with non-modal pages. These new modal and non-modal page types have the same declarative capabilities as normal pages when defining regions, processes, branches, and so forth. Theme 26 and Theme 42 include support for modal dialogs.

## Allow Multiple Interactive Reports on One Page

These feature allows developers to create pages that include more than one interactive report region.

## New jQuery Mobile Smartphone and Tablet Themes

New jQuery Mobile and Tablet themes have been added to utilize recently introduced jQuery Mobile features and widgets, such as panels, popups, dialogs and to implement a consistent use of jQuery Mobile theme swatches across all templates.

## Application Express Release 5.0 Universal Theme

The Universal Theme is new application user interface that does away with excessive templates. The Universal Theme empowers developers to build modern, responsive, sophisticated, accessible applications without requiring expert knowledge of HTML, CSS, or JavaScript. Key features associated with the Universal Theme include:

- **Theme Styles.** Theme Styles are available in newer themes, such as *Universal Theme - 42* and *Mobile - 51*. A theme style is a CSS that is added to the base CSS.
- **Theme Roller.** Adjust a number of style attributes and see changes applied to your application in real time. Once you are satisfied with the result, you can save your changes as a Theme Style directly to your application.
- **Template Options.** Easily customize how buttons, regions, lists, and other template-based components display. Using template options, you can displays a single template in several different ways using fewer templates but building far more versatile applications.

To learn more about the Universal Theme, install the *Universal Theme Sample Application*.

**See Also:** "Installing a Packaged Application" in *Oracle Application Express Application Builder User's Guide* and "[New Browser Requirements](#)" on page 1-11

## Improvements to Authorizations

A new `APEX_AUTHORIZATION` package contains developer APIs to manage authorizations within an application. Workspace groups can be granted to other workspace groups, to support indirect group membership. Dynamic groups can be enabled during authentication. These groups can be external to Oracle Application Express, for example queried using LDAP, or Workspace groups. If the group exists in the workspace, granted groups are automatically enabled. In case of Application Express Accounts authentication, the user's groups are automatically enabled. New authorization scheme types **Is In Group** and **Is Not In Group** are available to check for group membership. If an application's authentication scheme is **Database Accounts**, these also check for database role membership.

## Improved Label Accessibility

Oracle Application Express release 5.0 includes improved accessibility for a subset of item types that are not based on standard form elements (for example, input, textarea and select), where the HTML LABEL element is insufficient in providing an accessible label for the item. In order for this new support to work and provide the framework the necessary reference to be able to associate to the item to the label, you must ensure that your label templates include `id="#LABEL_ID#"` within the LABEL HTML element defined in the Before Label attribute in your theme's label templates.

## Fixed Headings in Interactive Reports

Interactive Reports now provide the capability to define fixed column headings, such that the header remains in a fixed in position when the user is scrolling down the report. This functionality is only supported for applications using the Universal Theme.

## Improvements to Flash Charts

Oracle Application Express release 5.0 includes improved rendering performance for Flash Charts with large volumes of data.

## Changed Behavior

This section describes changed behavior in Oracle Application Express release 5.0.

**Tip:** This section is current as of the writing of this document. To view the most current listing of changed behavior, go to the Known Issues page:

<http://www.oracle.com/technetwork/developer-tools/apex/application-express/apex-50-known-issues-2504535.html>

---

---

**Note:** If you are not updating from Oracle Application Express release 4.2 to release 5.0, see "Changed Behavior" in *Oracle Application Express Release Notes release 4.2* for other changes.

---

---

Changed behavior for Oracle Application Express release 5.0 includes:

- [Compatibility Mode](#)
- [New Browser Requirements](#)
- [Updated JavaScript Libraries](#)
- [Updated CKEditor](#)
- [Updated AnyChart Flash Charts](#)
- [Updated AnyGantt Charts](#)
- [Enabling Network Services in Oracle Database 11g or Later](#)
- [Changes to Shared Components, Static Files](#)
- [Static Application Files Included in Application Exports](#)
- [Deprecated API Call Raises a Runtime Error](#)
- [Changes to APEX\\_APPLICATION\\_FILES and WWV\\_FLOW\\_FILES Views](#)
- [Running an Application or Worksheet Displays a New Window](#)
- [Application-level Attributes Moved to User Interface Details](#)
- [Buttons Migrated to Template-based Buttons](#)
- [Available Updates Region](#)
- [Improvements to Server-side Page and Region Caching](#)
- [Addition of Plug-in Help Text](#)
- [Interactive Report Customizations](#)
- [Interactive Report Column ID and Header Value](#)
- [Changes to the Rendering of Nested Lists](#)
- [Password Expiration and Signing in to Application Builder](#)

- [Changed HTML Escaping Rules for Display Only Items](#)
- [Runtime Developer Toolbar Changes](#)
- [Dynamic Action Set Value Action Set Type JavaScript Expression More Strict](#)
- [Deprecation of Item Buttons](#)
- [jQuery Deprecation of Globally Triggered Events](#)

## Compatibility Mode

The application attribute Compatibility Mode controls the compatibility mode of the Application Express runtime engine. Certain runtime behaviors change from release to release. You can use the Compatibility Mode attribute to obtain specific application behavior. This section lists Compatibility Mode changes by release. Note that all mode changes are inclusive in that all changes in older releases are included in newer releases.

**See Also:** "Editing Application Attributes," "Properties" in *Oracle Application Express Application Builder User's Guide* for more information on setting the Compatibility Mode attribute

### Compatibility Mode Changes in Mode 4.1

In Oracle Application Express release 4.1, Automatic DML forms raised an error when rendering the page if the column name of the source of an item was invalid. Prior to Oracle Application Express release 4.1, an invalid column name of the source of an item would not raise an error when rendering the page but it would also not set session state of the item.

Also, in Oracle Application Express release 4.1, there are two new application Security Attributes to control Browser Security: **Cache** and **Embed in Frames**. Enabling the Cache attribute enables the browser to save the contents of your application's pages in its cache, both in memory and on disk. The Embed in Frames attribute controls if the browser displays your application's pages within a frame. Applications running in a Pre-4.1 Compatibility Mode function as if the Cache is enabled and as if Embed in Frames is set to allowed. Applications running in Compatibility Mode **4.1** or later respect the specific Browser Security attributes.

Also, in Oracle Application Express release 4.1, because of bug 12990445, the following changes were implemented for Automatic Row Processing (DML) process types. The code which performs the `INSERT` was changed to determine if the columns should be included in the `INSERT` statement. Note that these are the same checks which occur before an `UPDATE`. These new checks include:

- Is the source type a DB Column?
- Does the specified Build Option have a status of Include or is it not specified at all?
- Is the page item contained in the `POST` request? For example, if the page item is conditional it will not be contained in the `POST` request if the condition evaluates to `FALSE` during page rendering.
- Is the page item not of type Display Only where Save State is set to No?

To enable these behaviors, set the Compatibility Mode to **4.1** or later. For behavior that matches earlier releases, set the Compatibility Mode to **Pre-4.1**.

## Compatibility Mode Changes in Mode 4.2

In Oracle Application Express release 4.2 due to changes for the new grid layout, when a page is rendered, all regions in a certain display point are evaluated before rendering that display point, to find out if they should be displayed or not (so that the grid layout knows how many columns to render). The regions where the evaluation returned true will be executed and displayed. However, this will not work if a PL/SQL based region sets session state, which is then used in a subsequent region condition to determine if the region should be displayed, because the condition has already been checked before the display point is rendered. Use computations or PL/SQL processes to set session state before any region is displayed. In previous versions, the condition was evaluated right before each region was displayed.

In Oracle Application Express release 4.2, computations and processes with a processing point Before Region(s) do now fire before any region gets rendered. Computations and processes with a processing point After Region(s) fire after all regions have been rendered. In previous versions the computations and processes fired just before and after the region display point Page Template Body (1-3).

Oracle Application Express Patch Set 4.2.2 added two new Compatibility Mode changes for Compatibility Mode 4.2:

- Text areas were changed to always use the Maximum Width attribute to restrict text input.
- Enhanced security for report column links, where the link contains both JavaScript and references to other report column substitutions, for example:

```
javascript:alert( 'Delete #NAME#' );
```

In the previous example, *NAME* is a column name in the report.

Prior to Oracle Application Express release 4.2.1, to protect against possible cross-site scripting vulnerabilities you would have had to explicitly escape any column values in the report source, so that they could safely be used in JavaScript links. When running in Compatibility Mode 4.2, Oracle Application Express automatically JavaScript escapes column name substitutions referenced in JavaScript links if the column is defined to escape special characters.

To learn more, see

<http://www.oracle.com/technetwork/developer-tools/apex/application-express/apex-422-patch-set-notes-1940408.html>) and search for *Compatibility Mode*.

## Compatibility Mode Changes in Mode 5.0

In Oracle Application Express release 5.0, referencing a Static Application File with #WORKSPACE\_IMAGES# no longer returns the application file. Instead, use #APP\_IMAGES#.

Static Application File references with #APP\_IMAGES# only returns static application files defined in Shared Components, Static Application Files. Previously, any file uploaded with a File Browse item type and stored in APEX\_APPLICATION\_FILES were returned.

The API calls to `wwv_flow_custom_auth_std.logout`, `wwv_flow_custom_auth_std.logout_then_go_to_page`, `wwv_flow_custom_auth_std.logout_then_go_to_url`, and `apex_custom_auth.logout` are desupported and will raise a runtime error instead of logging out from the Oracle Application Express session. Instead, use the `apex_authentication.logout` entry point.

Starting with Oracle Application Express release 5.0, the data upload process includes Unique Columns. The second step of data loading process, Column Mapping, maps the

columns of the data to be uploaded to the underlying table columns. Prior to release 5.0, columns defined as `Unique Columns` were left out of the data upload process. In release 5.0, `Unique Columns` columns are included.

Prior to release 5.0, developers using data upload did not have the option to choose a date format. Instead, a parser checked for the best format to match the user's entry or an end user could enter own format. Oracle Application Express release 5.0 includes a new item that enables the user to choose an application date format or user entered format. Because applications created before release 5.0 do not have an item, a `Compatibility Mode of 5.0` checks if the user has entered some data. If no data has been entered, it picks the application date format.

When a session timeout occurs and no timeout URL is specified, Oracle Application Express raises an error instead of redirecting to the application's home page. If the session setup for an Ajax requests fails, Oracle Application Express also raises an error. For Ajax requests that expect JSON, the response is a JSON string with members that describe the error. For other requests, the error appears on an error page.

Page items based on a database column where the attribute `Source Used` is set to **Only when current value in session state is null** will raise an error when the page item gets rendered. Using this setting for a database column is very dangerous and can result in accidentally overwriting data when viewing and saving multiple records. Always set `Source Used` attribute to **Always, replacing any existing value in session state**.

## New Browser Requirements

Because Oracle Application Express relies upon standards-compliant HTML5, CSS3, and JavaScript, Oracle recommends that you use the latest web browser software available for the best experience. The following applications have been tested with Oracle Application Express:

- Mozilla Firefox 35
- Google Chrome 40
- Apple Safari 7
- Microsoft Internet Explorer 9

You can develop Oracle Application Express applications that support earlier web browser releases (such as Microsoft Internet Explorer 7 and 8) using legacy themes. However, the minimum supported version of Microsoft Internet Explorer to run Oracle Application Express applications is Microsoft Internet Explorer 9.0. Oracle Application Express has a number of advanced widgets, such as trees, menus, rich text editors, and other 3rd party components, which may not work correctly on earlier browsers.

## Updated JavaScript Libraries

The JavaScript libraries for jQuery and jQueryUI used by Oracle Application Express have been updated as follows:

- jQuery has been updated from version 1.7.1 to version 2.1.3.
- jQueryUI has been updated from version 1.8.14 to version 1.10.4.

For a list of bug fixes and enhancement, see the jQuery and jQueryUI release notes at:

- [http://docs.jquery.com/Downloading\\_jQuery#Current\\_Release](http://docs.jquery.com/Downloading_jQuery#Current_Release)
- <http://jqueryui.com/docs/Changelog>

## Updated CKEditor

The CKEditor used by Oracle Application Express release 5.0 has been updated to CKEditor version 4.4.6.

## Updated AnyChart Flash Charts

The AnyChart Flash charts used by Oracle Application Express have been updated to the latest version 6.2.0.

AnyChart 6.2.0 includes rendering performance improvement for HTML5 engine in Internet Explorer 6.x, 7.x, 8.x. Support for the AnyChart Flash parameter `XMLFile` has been removed, and the AnyChart JavaScript `setXMLFile()` method should now be used instead.

For example:

```
var chart = new AnyChart('#IMAGE_
PREFIX#flashchart/anychart6/swf/OracleAnyChart.swf');
    chart.width = 700;
    chart.height = 300;
    chart.setXMLFile('#IMAGE_PREFIX#flashchart/anychart6/swf/anychart.xml');
    chart.write();
```

3D plotting has been added to the HTML5 engine. When rendering a chart as HTML5, it is now possible to create 3D Column, 3D Stacked Column, 3D Stacked Column (Percent), 3D Horizontal Bar, 3D Stacked Horizontal Bar, 3D Stacked Horizontal Bar (Percent), and 3D Pie charts. 3D Range charts are currently not supported by the HTML5 engine.

See the AnyChart website for bug fixes and enhancements at:

<http://6.anychart.com/products/anychart7/history/>

To view AnyChart documentation see:

<http://6.anychart.com/products/anychart/docs/>

## Updated AnyGantt Charts

The AnyGantt charts used by Oracle Application Express have been updated to the latest version 4.3.0.

Prior to Oracle Application Express release 4.2, AnyGantt charts used a JavaScript Integration library called `AnyChart.js`, with an associated class name of `AnyChart`.

In Oracle Application Express release 4.2 and later, the AnyGantt JavaScript Integration Library has been refactored, and renamed to `AnyGantt.js`. The associated class has been renamed to `AnyGantt`. Existing applications containing AnyGantt 4.1.0 charts are automatically upgraded to AnyGantt 4.2.0 charts in Oracle Application Express release 5.0. However, custom AnyGantt 4.1.0 chart regions will need to be manually updated, to change references to the old JavaScript library name, `AnyChart.js`, with the new name, `AnyGantt.js`.

See AnyChart website for bug fixes and enhancements at:

<http://6.anychart.com/products/anygantt7/history/>

## Enabling Network Services in Oracle Database 11g or Later

This section describes how to enable network services in Oracle Database 11g or later.

- [When and Why Network Services Must be Enabled](#)
- [Granting Connect Privileges Prior to Oracle Database 12c](#)
- [Granting Connect Privileges in Oracle Database 12c](#)
- [About Troubleshooting an Invalid ACL Error](#)

**Tip:** To run the examples described in this section, the compatible initialization parameter of the database must be set to at least 11.1.0.0.0. By default a 12c database will already have the parameter set properly, but a database upgraded to 11g from a prior version may not. See "Creating and Configuring an Oracle Database" in *Oracle Database Administrator's Guide* for information about changing database initialization parameters.

The examples below should be modified according to your environment and in an Oracle Database 12c Pluggable Databases architecture, should be run on each PDB.

### When and Why Network Services Must be Enabled

By default, the ability to interact with network services is disabled in Oracle Database 11g Release 1 or 2 or later. Therefore, if you are running Oracle Application Express with Oracle Database 11g Release 1 or 2 or later, you must use the new `DBMS_NETWORK_ACL_ADMIN` package to grant connect privileges to any host for the `APEX_050000` database user. Failing to grant these privileges results in issues with:

- Sending outbound mail in Oracle Application Express.  
Users can call methods from the `APEX_MAIL` package, but issues arise when sending outbound email.
- Using Web services in Oracle Application Express.
- PDF report printing.

**Tip:** To run the examples described in this section, the compatible initialization parameter of the database must be set to at least 11.1.0.0.0. By default Oracle Database 11g or 12c will already has the parameter set properly, but a database upgraded to Oracle Database 12c from a prior version may not. See "Creating and Configuring an Oracle Database" in *Oracle Database Administrator's Guide* for information about changing database initialization parameters.

### Granting Connect Privileges Prior to Oracle Database 12c

The following example demonstrates how to grant connect privileges to any host for the `APEX_050000` database user. This example assumes you connected to the database where Oracle Application Express is installed as `SYS` specifying the `SYSDBA` role.

```
DECLARE
  ACL_PATH VARCHAR2(4000);
  ACL_ID   RAW(16);
BEGIN
  -- Look for the ACL currently assigned to '*' and give APEX_050000
  -- the "connect" privilege if APEX_050000 does not have the privilege yet.
```

```

SELECT ACL INTO ACL_PATH FROM DBA_NETWORK_ACLS
WHERE HOST = '*' AND LOWER_PORT IS NULL AND UPPER_PORT IS NULL;

-- Before checking the privilege, ensure that the ACL is valid
-- (for example, does not contain stale references to dropped users).
-- If it does, the following exception will be raised:
--
--
-- ORA-44416: Invalid ACL: Unresolved principal 'APEX_050000'
-- ORA-06512: at "XDB.DBMS_XDBZ", line ...
--
SELECT SYS_OP_R20(extractValue(P.RES, '/Resource/XMLRef')) INTO ACL_ID
FROM XDB.XDB$ACL A, PATH_VIEW P
WHERE extractValue(P.RES, '/Resource/XMLRef') = REF(A) AND
EQUALS_PATH(P.RES, ACL_PATH) = 1;

DBMS_XDBZ.ValidateACL(ACL_ID);
IF DBMS_NETWORK_ACL_ADMIN.CHECK_PRIVILEGE(ACL_PATH, 'APEX_050000',
'connect') IS NULL THEN
    DBMS_NETWORK_ACL_ADMIN.ADD_PRIVILEGE(ACL_PATH,
'APEX_050000', TRUE, 'connect');
END IF;

EXCEPTION
-- When no ACL has been assigned to '*'.
WHEN NO_DATA_FOUND THEN
DBMS_NETWORK_ACL_ADMIN.CREATE_ACL('power_users.xml',
'ACL that lets power users to connect to everywhere',
'APEX_050000', TRUE, 'connect');
DBMS_NETWORK_ACL_ADMIN.ASSIGN_ACL('power_users.xml', '*');
END;
/
COMMIT;

```

The following example demonstrates how to provide less privileged access to local network resources. This example enables access to servers on the local host only, such as email and report servers.

```

DECLARE
    ACL_PATH VARCHAR2(4000);
    ACL_ID RAW(16);
BEGIN
-- Look for the ACL currently assigned to 'localhost' and give APEX_050000
-- the "connect" privilege if APEX_050000 does not have the privilege yet.
SELECT ACL INTO ACL_PATH FROM DBA_NETWORK_ACLS
WHERE HOST = 'localhost' AND LOWER_PORT IS NULL AND UPPER_PORT IS NULL;

-- Before checking the privilege, ensure that the ACL is valid
-- (for example, does not contain stale references to dropped users).
-- If it does, the following exception will be raised:
--
--
-- ORA-44416: Invalid ACL: Unresolved principal 'APEX_050000'
-- ORA-06512: at "XDB.DBMS_XDBZ", line ...
--
SELECT SYS_OP_R20(extractValue(P.RES, '/Resource/XMLRef')) INTO ACL_ID
FROM XDB.XDB$ACL A, PATH_VIEW P
WHERE extractValue(P.RES, '/Resource/XMLRef') = REF(A) AND
EQUALS_PATH(P.RES, ACL_PATH) = 1;

```

```

DBMS_XDBZ.ValidateACL(ACL_ID);
IF DBMS_NETWORK_ACL_ADMIN.CHECK_PRIVILEGE(ACL_PATH, 'APEX_050000',
'connect') IS NULL THEN
  DBMS_NETWORK_ACL_ADMIN.ADD_PRIVILEGE(ACL_PATH,
'APEX_050000', TRUE, 'connect');
END IF;

EXCEPTION
  -- When no ACL has been assigned to 'localhost'.
WHEN NO_DATA_FOUND THEN
  DBMS_NETWORK_ACL_ADMIN.CREATE_ACL('local-access-users.xml',
  'ACL that lets power users to connect to everywhere',
  'APEX_050000', TRUE, 'connect');
  DBMS_NETWORK_ACL_ADMIN.ASSIGN_ACL('local-access-users.xml','localhost');
END;
/
COMMIT;

```

### Granting Connect Privileges in Oracle Database 12c

Procedures CREATE\_ACL, ASSIGN\_ACL, ADD\_PRIVILEGE and CHECK\_PRIVILEGE in DBMS\_NETWORK\_ACL\_ADMIN are deprecated in Oracle Database 12c. Oracle recommends using APPEND\_HOST\_ACE instead. The following example demonstrates how to grant connect privileges to any host for the APEX\_050000 database user. This example assumes you connected to the database where Oracle Application Express is installed as SYS specifying the SYSDBA role.

```

BEGIN
  DBMS_NETWORK_ACL_ADMIN.APPEND_HOST_ACE(
    host => '*',
    ace => xs$ace_type(privilege_list => xs$name_list('connect'),
      principal_name => 'apex_050000',
      principal_type => xs_acl.ptype_db));
END;
/

```

The following example demonstrates how to provide less privileged access to local network resources. This example enables access to servers on the local host only, such as email and report servers.

```

BEGIN
  DBMS_NETWORK_ACL_ADMIN.APPEND_HOST_ACE(
    host => 'localhost',
    ace => xs$ace_type(privilege_list => xs$name_list('connect'),
      principal_name => 'apex_050000',
      principal_type => xs_acl.ptype_db));
END;
/

```

### About Troubleshooting an Invalid ACL Error

If you receive an ORA-44416: Invalid ACL error after running the previous script, use the following query to identify the invalid ACL:

```

REM Show the dangling references to dropped users in the ACL that is assigned
REM to '*'.

```

```

SELECT ACL, PRINCIPAL

```

```

FROM DBA_NETWORK_ACLS NACL, XDS_ACE ACE
WHERE HOST = '*' AND LOWER_PORT IS NULL AND UPPER_PORT IS NULL AND
      NACL.ACLID = ACE.ACLID AND
      NOT EXISTS (SELECT NULL FROM ALL_USERS WHERE USERNAME = PRINCIPAL);

```

Next, run the following code to fix the ACL:

```

DECLARE
  ACL_ID  RAW(16);
  CNT     NUMBER;
BEGIN
  -- Look for the object ID of the ACL currently assigned to '*'
  SELECT ACLID INTO ACL_ID FROM DBA_NETWORK_ACLS
     WHERE HOST = '*' AND LOWER_PORT IS NULL AND UPPER_PORT IS NULL;

  -- If just some users referenced in the ACL are invalid, remove just those
  -- users in the ACL. Otherwise, drop the ACL completely.
  SELECT COUNT(PRINCIPAL) INTO CNT FROM XDS_ACE
     WHERE ACLID = ACL_ID AND
           EXISTS (SELECT NULL FROM ALL_USERS WHERE USERNAME = PRINCIPAL);

  IF (CNT > 0) THEN

    FOR R IN (SELECT PRINCIPAL FROM XDS_ACE
              WHERE ACLID = ACL_ID AND
                    NOT EXISTS (SELECT NULL FROM ALL_USERS
                               WHERE USERNAME = PRINCIPAL)) LOOP

      UPDATE XDB.XDB$ACL
         SET OBJECT_VALUE =
             DELETEXML(OBJECT_VALUE,
                       '/ACL/ACE[PRINCIPAL="' || R.PRINCIPAL || '"]')
         WHERE OBJECT_ID = ACL_ID;
      END LOOP;

    ELSE
      DELETE FROM XDB.XDB$ACL WHERE OBJECT_ID = ACL_ID;
    END IF;

  END;
  /

  REM commit the changes.

  COMMIT;

```

Once the ACL has been fixed, you must run the first script in this section to apply the ACL to the APEX\_050000 user. See ["Granting Connect Privileges Prior to Oracle Database 12c"](#) on page 1-13.

## Changes to Shared Components, Static Files

Previously, in Application Builder Shared Components, Static Files supported three different file stores: cascading style sheets, images, and static files. In Oracle Application Express release 5.0, Shared Components, Static Files has been removed. Now users upload static files to a central repository that is available for a specific application (Static Application Files) or for all applications within a workspace (Workspace Application Files).

## Static Application Files Included in Application Exports

Static application files uploaded to Shared Components are automatically included in an application export. In Oracle Application Express release 5.0, there is no need to create supporting object scripts to install them.

**See Also:** "Exporting an Application and Application Components" in *Oracle Application Express Application Builder User's Guide*.

In a future version of Oracle Application Express, the dictionary view `APEX_APPLICATION_FILES` will no longer include CSS, image or static files uploaded in Shared Components. Instead, use the new views `APEX_WORKSPACE_STATIC_FILES` and `APEX_APPLICATION_STATIC_FILES`.

## Deprecated API Call Raises a Runtime Error

The following API calls were deprecated in Oracle Application Express release 4.2.2: `WWV_FLOW_CUSTOM_AUTH_STD.LOGOUT`, `WWV_FLOW_CUSTOM_AUTH_STD.LOGOUT_THEN_GO_TO_PAGE`, `WWV_FLOW_CUSTOM_AUTH_STD.LOGOUT_THEN_GO_TO_URL`, `APEX_CUSTOM_AUTH.LOGOUT`, `APEX_CUSTOM_AUTH.LOGOUT_THEN_GO_TO_PAGE`, and `APEX_CUSTOM_AUTH.LOGOUT_THEN_GO_TO_URL`. When an application's compatibility mode is 5.0, these deprecated API call will raise a runtime error instead of logging out from the Oracle Application Express session. Use the `APEX_AUTHENTICATION.LOGOUT` entry point instead.

## Changes to `APEX_APPLICATION_FILES` and `WWV_FLOW_FILES` Views

Because of internal changes to the views `APEX_APPLICATION_FILES` and `WWV_FLOW_FILES`, it is no longer possible to lock rows with `SELECT FOR UPDATE` or to use the `RETURNING` clause of `INSERT` or `DELETE` statements.

## Running an Application or Websheet Displays a New Window

When you run an application, the application or Websheet displays in a new window. Whether that new window is a new tab or new browser windows depends upon your Web Browser. If you are using Google Chrome or Apple Safari, the running application displays in a new tab. If you are using Microsoft Internet Explorer or Mozilla Firefox, the application may display in a new browser window. You can further control how Oracle Application Express manages tabs and windows when running applications by editing your account preferences.

## Application-level Attributes Moved to User Interface Details

The previously application-level attributes Content Delivery Network, JavaScript File URLs, and Include Legacy JavaScript attributes have been moved to the User Interface Details page.

## Buttons Migrated to Template-based Buttons

All buttons are now based on templates. Image-based buttons and HTML buttons have been automatically migrated to template-based buttons. Although there is no user interface impact in applications, the view `APEX_APPLICATION_PAGE_BUTTONS` returns different data in the `BUTTON_TEMPLATE`, `BUTTON_TEMPLATE_ID`, `BUTTON_CSS_CLASSES`, `BUTTON_ATTRIBUTES`, `COMPONENT_SIGNATURE`, `IMAGE_NAME (*)` and `IMAGE_ATTRIBUTES (*)` columns. Columns marked with an asterisk (\*) are obsolete and always null. Oracle recommends you review and modify any customer code that relies on information from these view columns.

## Available Updates Region

An Available Updates region on the Application Builder and Oracle Application Express Administration Services home pages indicates if updates are available for Oracle Application Express and the Oracle REST Data Services. If your installation is current the following message displays:

System is up-to-date

To configure updates, click **Set Preferences for Available Updates**. You can enable or disable updates by selecting Yes or No from Check for Available Updates.

To perform this check Application Express transmits the version number of Oracle Application Express and other system components to Oracle Corporation. In order to continuously improve our products, Oracle is interested in learning about product usage. To that end, statistics can occasionally be sent to Oracle describing the product features in use. No personally identifiable information is sent. To review Oracle's privacy policy see:

<http://www.oracle.com/us/legal/privacy/overview/index.html>

## Improvements to Server-side Page and Region Caching

The server-side caching of page and region content has been unified and extended to support caching by Application Express session. Previously, caching could not be used when pages or regions contained session specific checksum protected URLs and Asynchronous JavaScript and XML (Ajax) callback URLs or plug-in regions or items. By enabling the new caching option Cache by Session on pages and regions, developers can use the server side cache even when the cached content contains such URLs. Developers can also specify that the cache for a region depends on item values. Oracle Application Express renders the region and refreshes the cache when the item values have changed. Region caching was previously unsupported for regions on global pages and when the request URL contained items. Oracle Application Express now supports these use cases.

## Addition of Plug-in Help Text

Plug-in help text displays in many places within Page Designer. Prime examples include when you hover over a component in the Gallery and when displaying property help for a list of the available item, region and dynamic action types. When developing plug-ins, developers should only include summary information in the help text. For that reason, plug-in help text only accepts simple text with a limited number of usable HTML tags. Oracle recommends plug-in developers use the About URL attribute to provide more detailed information about a plug-in.

## Interactive Report Customizations

Oracle Application Express release 5.0 includes some significant architectural changes to interactive reports. First, to support multiple reports on a single page, the client-side code was re-implemented as a jQuery UI widget. Second in the underlying markup rendered was greatly improved to be leaner, more semantic and more accessible. Unfortunately, any customizations to interactive reports using either CSS or JavaScript (including custom JavaScript code in dynamic actions), may no longer work. This includes any customizations using the 'gReport' variable from JavaScript code, as this global variable no longer exists with the new architecture.

**Note:** This may also affect plug-ins used in your applications that customize interactive reports. For a list of plug-ins that are known to have issues with interactive reports, see ["Incompatible Third Party Plug-Ins"](#) on page 1-38.

## Interactive Report Column ID and Header Value

With Oracle Application Express release 5.0, interactive reports now support multiple reports per page and a more modern interface. These changes also include improvements to the internal markup rendered, resulting in leaner and more semantic markup. Part of this work focused on the report's table column markup. In previous releases, a column in a report used the column name for the corresponding table header (TH) cell ID and as the HEADERS value for the corresponding table data (TD) cells. In order to support multiple reports on a page and to avoid the risk of ID collisions on the page, this was changed to use the internal ID of the column rather than the column name. However if you still want the report to use the column name for these attribute values (for example if you have dependent CSS or JavaScript based customizations), there is a new Static ID column attribute. If you set the Static ID column attribute to the column name, it will be used instead as in previous releases. In addition, existing applications that are upgraded to or imported into an Oracle Application Express release 5.0 environment will also have this Static ID automatically set to the column name, maintaining existing behavior.

## Changes to the Rendering of Nested Lists

When Oracle Application Express renders nested lists, it now emits the list template's Between List Elements HTML fragment between all top level list nodes. Previously, it only emitted Between List Elements when the following list node contained no sub nodes. The Between Sublist Items HTML fragment was not emitted between all sibling sub nodes, either.

These issues have been fixed in Oracle Application Express 5.0, but the fix may render unexpected Between List Elements and Between Sublist Items HTML fragments in existing applications. To find applications and templates that might be affected by this change, use the following query:

```
select distinct
    r.workspace,
    r.application_id,
    t.template_name,
    t.between_items,
    t.between_sub_list_items
from apex_application_page_regions r,
    apex_application_temp_list t
where r.application_id = t.application_id
```

```

and r.list_template_override_id = t.list_template_id
and (t.between_items is not null
or t.between_sub_list_items is not null)

```

## Password Expiration and Signing in to Application Builder

After upgrading to Oracle Application Express release 5.0, you may be prompted to change your password after a successful login attempt to the Application Builder. This is because password expiration of developer accounts now respect the default instance setting of password expiration of every 45 days, even if there is a null value in password expiration for your workspace. Note that this changed behavior only applies to signing in to the Application Builder, not the applications within your workspace. Those applications will still respect your workspace setting for password expiration, and if null, users of your application will not be prompted to change their passwords.

## Changed HTML Escaping Rules for Display Only Items

A change to the rendering of Display Only Items may lead to over-escaping in existing applications. This potentially affects Display Only Items that:

- Have Save Session State set to No.
- Have Escape Special Characters set to Yes.
- Get their value in the application (for example, with a computation or in a Before Header process).
- Are referenced with substitution syntax.

In previous releases of Oracle Application Express, the Escape Special Characters attribute of these items was ignored when applying the substitution. For example, developers might have created a Before Header process to initialize such an item P1\_DISPLAY\_ONLY, which was later used as &P1\_DISPLAY\_ONLY. in a Static Content region body. If the initialization value contained HTML, it was rendered unescaped in the region. Starting with Oracle Application Express release 5.0, the item value is escaped if Escape Special Characters is set to Yes. To find items that might be affected by this change, use the following query:

```

select i.workspace,
       i.application_id,
       i.page_id,
       i.item_name,
       r.region_name
  from apex_application_page_items i,
       apex_application_page_regions r
 where i.application_id      = r.application_id
       and i.page_id        = r.page_id
       and i.display_as_code = 'NATIVE_DISPLAY_ONLY'
       and nvl(i.attribute_01,'N') = 'N' /* save state */
       and nvl(i.escape_on_http_output,'Yes') = 'Yes'
       and ( nvl(instr(r.region_name, '&'||i.item_name||'.'),0) > 0
            or nvl(instr(r.region_source, '&'||i.item_name||'.'),0) > 0
            or nvl(instr(r.region_header_text, '&'||i.item_name||'.'),0) > 0
            or nvl(instr(r.region_footer_text, '&'||i.item_name||'.'),0) > 0 )
 order by 1,2,3,4

```

## Runtime Developer Toolbar Changes

The Create and Caching buttons have been removed. The Show Edit Links feature has been replaced with Quick Edit. Quick Edit is integrated to work with Page Designer. Quick Edit does not support all the same types of components that Show Edit Links did. For example it doesn't support editing tabs or list items. If a page has a very large number of components, including column headings, or if component elements have duplicate IDs Quick Edit may not work for all of the components.

## Dynamic Action Set Value Action Set Type JavaScript Expression More Strict

In the past the dynamic action Set Value action JavaScript Expression set type would allow code that was not an expression. Now the JavaScript code must be an expression. It cannot for example be an `if` statement. To turn one or more statements into an expression wrap them in a self invoking function and put `return` in front of any expressions that you want the value set to.

Consider the following example:

```
if (/*some test expression*/) {
    $v("Px_V1");
} else {
    $v("Px_V2");
}
```

You would change this example to:

```
(function() {
if (/*some test expression*/) {
    return $v("Px_V1");
} else {
    return $v("Px_V2");
}
})();
```

## Deprecation of Item Buttons

Previously, Oracle Application Express supported two separate button types: Item Buttons and Region Buttons. The type determined where the button could be positioned. In Oracle Application Express 5.0 there is only one button type which can be positioned in a region or next to items.

## jQuery Deprecation of Globally Triggered Events

Oracle Application Express release 5.0 includes an updated jQuery library version (updated from 1.7.1 to 2.1.3). One significant update, which may result in an error in your applications is the deprecation of globally triggered events. This may affect you, for example, if you defined a dynamic action to fire on a 'Custom' event (for example, 'myEvent'), which was triggered through JavaScript by code similar to this:

```
$.event.trigger( "myEvent" );
```

This would work in Oracle Application Express release 4.2, triggering the dynamic action code. In release 5.0 however, this will most likely no longer work (see the note for when this will still work), and will require a code change. Events should be

triggered on the element for which they are relevant, and as such the JavaScript to trigger the dynamic action will need to be changed to match the element defined in the 'When' attributes of the dynamic action.

So for example, if the dynamic action above, fired on the 'myEvent' event, and had a 'When > Selection Type' of 'Item' and 'Item' = 'P1\_ITEM', then the event must be triggered on that element:

```
$( "#P1_ITEM" ).trigger( "myEvent" );
```

If the 'When' element is a region, note you must provide a 'Static ID' on the region, then use that in your custom triggering code similar to the previous example.

**Note:** This deprecation may not be an issue for you, if the dynamic action itself is defined on the document. Globally triggered events appear to still work if the event handler is defined at document-level. Even though this will not cause any errors, Oracle recommends that you to revisit this logic and firstly assess if the document scope is really the right scope for the event (perhaps you are really doing something at the region-level), and then update both your dynamic action and triggering logic to be based on the same element.

## Deprecated Features

This section describes deprecated parameters, options, syntax, features and components in Oracle Application Express release 5.0.

Deprecated features are features which Oracle plan to desupport or remove in a future release of Oracle Application Express. If a feature is related to application metadata or an APIs, existing applications can still use the feature, but Oracle strongly recommends that developers start to modify their applications as described in this section. Use Oracle Application Express Advisor to scan existing applications for deprecated attributes.

**See Also:** "Running Advisor to Check Application Integrity" in *Oracle Application Express Application Builder User's Guide*

- [Deprecated Page Attributes](#)
- [Deprecated Classic Report Attributes](#)
- [Deprecated Tabular Form Attributes](#)
- [Deprecated Region Attributes](#)
- [Deprecated Item Attributes](#)
- [Deprecated Button Attributes](#)
- [Deprecated Condition Types](#)
- [Deprecated Branch Attributes](#)
- [Deprecated Process Attributes](#)
- [Deprecated Synchronous Ajax in Dynamic Actions](#)
- [Deprecated Legacy JavaScript Menu APIs](#)
- [Deprecated JavaScript API htmldb\\_Get Object](#)
- [Deprecated Rich Text Editor Attribute Values](#)

- [Deprecation of Dynamic Actions Based on DOM Objects](#)
- [Deprecation of APEX\\_PLSQL\\_JOB Package](#)
- [Deprecation of jsTree Region](#)
- [Deprecation Websheet PL/SQL Section Type](#)

**See Also:** ["Desupported Features"](#) on page 1-26

## Deprecated Page Attributes

Deprecated page attributes include:

- **Body Header** - The Body Header attribute is no longer available. If you want to replicate this region position, create a new page template and add an unused Region Display Position placeholder, such as #REGION\_POSITION\_10# before the #BODY# placeholder.
- **Include Standard JavaScript and CSS** - To remove the standard JavaScript and CSS included, you need to create a new page template and remove the #APEX\_JAVASCRIPT# and #APEX\_CSS# placeholders.

## Deprecated Classic Report Attributes

Deprecated classic report column types include:

- **Deprecated Column Types** - The following column types have been deprecated in classic reports: Date Picker; Date Picker (Classic); Popup LOV; Popup Key LOV; Radio Group; Row Selector; Simple Checkbox; Text Area; Text Field; Display as Text (Saves State).  
  
Oracle recommends creating tabular forms instead of a classic report. Classic reports are not designed to have enterable fields.
- **Hidden Column Type** - All columns of this type should be changed to Hidden Column.

## Deprecated Tabular Form Attributes

The tabular form Column Type, Date Picker (Classic) has been deprecated. All columns of this type should be updated to Date Picker.

## Deprecated Region Attributes

Deprecated region types include:

- **Classic Tree** - Recreate these regions by specifying the region type, Tree and using the same SQL statement.
- **SVG Chart and Simple Chart** - Replace these regions with type Chart, using the same SQL Statement.

## Deprecated Item Attributes

Deprecated item attributes include:

- **Type, Date Picker (Classic)** - Update these items to Date Picker.

- **Type, Stop and Start Grid Layout** - Remove the Stop and Start Grid Layout item and set Start New Grid to Yes for the next page item.
- **File Browse Storage Type, Table WWV\_FLOW\_FILES** - Any select, update or delete operations on WWV\_FLOW\_FILES should be changed to using the APEX\_APPLICATION\_TEMP\_FILES table. Deletes are no longer necessary, as the file will automatically be purged after the request or when the session is purged.

**Tip:** If you used WWV\_FLOW\_FILES as a permanent store, the files should be copied into their own BLOB column(s) within a table within your schema.

## Deprecated Button Attributes

Deprecated button attributes include:

- **Pre Text; Post Text** - You are no longer able to add text either side of buttons.
- **Action** - The Previous Page, Next Page, and Reset Page buttons will no longer be generated automatically when creating regions, for example creating a Form and Report on a table. You can manually recreate similar buttons, and enter the appropriate button behavior.

## Deprecated Condition Types

Table 3 deprecated condition types in Oracle Application Express release 5.0:

**Table 3** *Deprecated Condition Types*

Attribute	Condition Types	Action
Conditions; Read Only Conditions; Server Cache Conditions; Link Conditions	CGI_ENV: DAD_NAME $\neq$ Value; CGI_ENV: HTTP_POST $\neq$ Value; CGI_ENV: SERVER_NAME $\neq$ Value	Use a PL/SQL expression, such as SYS.OWA_UTIL.GET_CGI_ENV('XYZ') API instead.
Conditions; Read Only Conditions; Server Cache Conditions; Link Conditions	Client Browser is Microsoft Internet Explorer 7.0 or higher; Client Browser is Mozilla, Netscape 6.x/7x or higher; Client Browser is Other browsers (or older version); Client Browser is XHTML / CSS capable browser	Use a PL/SQL expression, such as SYS.OWA_UTIL.GET_CGI_ENV('HTTP_USER_AGENT') instead.
Conditions; Read Only Conditions; Server Cache Conditions; Link Conditions	SQL Reports; Current Page $\neq$ Page Submitted (posted); Text $\neq$ Value; Text is/ is NOT contained in Value/Item	Use PL/SQL Expression or PL/SQL Function returning Boolean condition types.
Conditions; Server Cache Conditions; Link Conditions	Always	By having no condition specified the same result will be achieved.

## Deprecated Branch Attributes

The Save State before Branching attribute has been deprecated. If you want to save session state before branching, you must create a process or computation to set the required values, if they are not already set when the page is submitted (for example, use :P10\_DEPTNO := 10;).

**Note:** If the branch does not set an item when branching, setting this flag to No has no impact.

## Deprecated Process Attributes

The following process attributes have been deprecated:

- Type, Legacy Automatic Row Processing - Replace these processes with Automatic Row Processing (DML)
- Type, Legacy Web Service - Replace these processes with Web Services.
- Fetch Mode, Set Memory Cache on Display - This fetch mode does not immediately assign the fetched value to the page item when the fetch process is executed, instead it is done when the page item is rendered. Oracle recommends that this attribute be set to NULL so that session state is immediately set when the fetch process is executed.

## Deprecated Synchronous Ajax in Dynamic Actions

In a future release, Oracle Application Express will change to use asynchronous Ajax requests for dynamic actions with attribute Wait For Result equal to Yes. Oracle Application Express applications must not rely on the currently synchronous behavior. Specifically do not make Ajax requests (using dynamic actions or by any other means) in response to the Page Unload (unload) or Before Page Submit (apexbeforepagesubmit) events.

## Deprecated Legacy JavaScript Menu APIs

In a future release, Oracle Application Express will move the following menu related APIs to legacy.js.

Deprecated Menu APIs: `item_menu`, `dhtml_CloseAllSubMenus`, `app_AppMenuMultiClose`, `dhtml_DocMenuCheck`, `dhtml_ButtonDropDown`, `dhtml_MenuOpen`, `dhtml_SingleMenuOpen`, `app_AppMenuMultiOpenBottom`, `app_AppMenuMultiOpenBottom2`, and `app_AppMenuMultiOpenBottom3`. Applications that currently uses any of the above APIs should be changed to use declarative menus (that is, Menu Navigation or menu list templates).

## Deprecated JavaScript API `htmlDb_Get` Object

A future release of Oracle Application Express will move the `htmlDb_Get` object into `legacy.js`. Code that currently uses `htmlDb_Get` should be rewritten to use APIs in the `apex.server` namespace.

## Deprecated Rich Text Editor Attribute Values

Deprecated Rich Text Editor attribute values include:

- Editor: Internet Explorer and FCKEditor 2 - Replace these editor types with CKEditor 4.

## Deprecation of Dynamic Actions Based on DOM Objects

Dynamic actions based on DOM Objects have been deprecated. Change your dynamic actions to use a jQuery Selector or JavaScript Expression instead of DOM Object.

## Deprecation of APEX\_PLSQL\_JOB Package

The APEX\_PLSQL\_JOB package has been deprecated and will no longer be available in the next major release of Oracle Application Express. Customers should replace this functionality with the native database-supplied package DBMS\_SCHEDULER.

## Deprecation of jsTree Region

The jsTree region has been deprecated. Change your jsTree regions to use the new APEX Tree region.

## Deprecation Websheet PL/SQL Section Type

Websheet PL/SQL section types has been deprecated. Editing of existing PL/SQL section types will no longer be available in the next major release of Oracle Application Express.

## Desupported Features

This section describes desupported parameters, options, syntax, features and components in Oracle Application Express release 5.0.

Desupported features are no longer available. If that feature is about application metadata or APIs then existing applications might not work as before and have to be modified to replace that feature.

- [Desupported Interactive Report Attributes](#)
- [Desupported Report Heading Sort Icons](#)
- [Desupported Default Report Templates](#)
- [Desupported Rich Text Editor Attribute Values](#)
- [Desupported Item Types](#)
- [Desupport of #PLUGIN\\_PREFIX# Substitution in Plug-in Files](#)
- [Desupport of APEX\\_SITE\\_ADMIN\\_PRIVS Package](#)
- [Desupport of Flash 3 Charts](#)
- [Desupport of Building Applications for Microsoft Internet Explorer 6](#)
- [Removal of Third Party Library iOS Inspired jQuery Mobile Theme](#)
- [Removed Packaged Applications](#)

**See Also:** ["Deprecated Features"](#) on page 1-22

## Desupported Interactive Report Attributes

The interactive report Search Bar attributes Button Template, Actions Menu Image, and Finder Image have been removed in Oracle Application Express release 5.0. If you previously defined these attributes they will have no effect on interactive reports in Oracle Application Express release 5.0.

**See Also:** ["Interactive Report Customizations"](#) on page 1-19

## Desupported Report Heading Sort Icons

The following attributes used to define the report heading sort icons have been de-supported for interactive reports and classic reports: Ascending Image, Descending Image, Asc Image Attributes, and Desc Image Attributes. Instead of referencing images directly, Oracle Application Express now uses CSS to render sort icons.

For interactive reports uses the following classes:

`.a-Icon.icon-irr-sort-asc` and `.a-Icon.icon-irr-sort-desc`

For classic reports use the following classes:

`.a-Icon.icon-rpt-sort-asc` and `.a-Icon.icon-rpt-sort-desc`

## Desupported Default Report Templates

The default templates (that is, default look 1 through 4 and vertical looks 1 and 2) have been desupported and have been replaced with just one default HTML standard report and one default vertical report. In general, do not use these default templates. Instead, use the proper report template defined in the application's theme.

## Desupported Rich Text Editor Attribute Values

Desupported Rich Text Editor attribute values include:

- Skin: Office 2003 and Version 2 - Will automatically be changed to a default skin.

## Desupported Item Types

Desupported item types include:

- **Text Field with Calculate Popup** - These items will automatically be updated to Text Field items.

## Desupport of #PLUGIN\_PREFIX# Substitution in Plug-in Files

Use of #PLUGIN\_PREFIX# substitution in plug-in files has been desupported and should not be used in Oracle Application Express release 5.0. In Oracle Application Express 5.0, plug-in files can be stored in a directory hierarchy so you do not need to use #PLUGIN\_PREFIX# substitution in plug-in files to reference other plug-in files. Use relative URLs instead. Existing plug-in files using #PLUGIN\_PREFIX# are automatically corrected during upgrade or import, no action necessary.

## Desupport of APEX\_SITE\_ADMIN\_PRIVS Package

The APEX\_SITE\_ADMIN\_PRIVS package has been removed. The procedures to manage restricted schemas and schema exceptions are now in the APEX\_INSTANCE\_ADMIN package. The SQL\*Plus script `report_instance_configuration.sql` in the Utilities directory displays information about the Oracle Application Express instance, including restricted schemas and schema exceptions.

## Desupport of Flash 3 Charts

Flash 3 Charts were deprecated in our 4.2.5 release and have been removed in Oracle Application Express release 5.0.

Customers with existing Flash 3 charts are automatically upgraded to the latest version of AnyChart. Customers with custom XML charts should be aware that while those charts are automatically upgraded, they will cause users to see the error XML Parser failure: The element type must be terminated by the matching end-tag instead of the chart. They will not render successfully until the user has:

1. Manually updated the contents of the custom XML region to use Flash 6-support XML as opposed to the earlier, totally different Flash 3 XML.
2. Changed **Use Custom XML** to **No** for those charts and Oracle Application Express will automatically generate the required XML for the chart region.

## **Desupport of Building Applications for Microsoft Internet Explorer 6**

Oracle Application Express no longer supports building applications to work on the Microsoft Internet Explorer 6 browser. Applications built in previous versions of Oracle Application Express for Microsoft Internet Explorer 6 may no longer work after upgrading to Oracle Application Express release 5.0.

## **Removal of Third Party Library iOS Inspired jQuery Mobile Theme**

The third party library iOS inspired jQuery Mobile theme, previously located in the `/i/libraries/ios-inspired-theme` directory is not compatible with jQuery Mobile 1.4 and therefore has been removed.

## **Removed Packaged Applications**

The following packaged applications removed in Oracle Application Express release 5.0 include:

- Packaged applications:
  - Artwork Catalog
  - Issue Tracker
  - Systems Catalog
- Sample applications:
  - Sample Forms and Grid Layout
  - Sample Dialog
  - Sample Lists
  - Sample Search
  - Sample Wizards

If you have installed previously these packaged application, they will still be unlocked and available for use. However, these packaged applications will no longer be available in the Packaged Apps Gallery.

## **Open Bugs and Known Issues**

This section describes bugs and known issues for Oracle Application Express release 5.0.

- Calendars in Mobile Pages Fail to Display an Entry for the Current Date After Navigation
- Dynamic Actions Do Not Fire on Regions with No Template
- Issues Displaying AnyMap Maps in Chrome 21 and Later
- Problems with SVG Charts
- Problems with Queries Containing a Bind Variable and a String with Two Dashes
- Importing Spreadsheet Data Containing Quotation Marks
- Runtime Errors in an Application Imported from a Previous Release
- DBA Authentication Restriction
- Exporter Tool Support for Microsoft Access
- Problem with Brazil Map
- Issues Displaying Data Point in AnyChart
- Themes Not Supporting Custom Legacy Calendars
- Interactive Report Region Hangs When Session Expires
- Upgrade Error with Websheet Objects
- Accessibility Issues
- Issues Using Style AquaLight and AquaDark in AnyChart
- Editing SVG Charts and Simple HTML Charts
- Microsoft Internet Explorer 9 Displays Outdated Browser Message
- Interactive Report Row Length Limit
- Popup LOVs in Tabular Forms Do Not Support Shared Static LOVs
- Rendering Issues with Microsoft Internet Explorer 9 When Developer Toolbar Debug Enabled
- Incompatible Third Party Plug-Ins
- Incompatible Third Party JavaScript Libraries
- Incompatible Third Party Browser Extension
- Displaying Event Titles in Legacy Calendars
- Installation Fails when Using Oracle Workspace Manager
- Issues Creating Forms Migration Project
- Running Sample Application Migration Files Generates an Error

## Calendars in Mobile Pages Fail to Display an Entry for the Current Date After Navigation

The default behavior when running a calendar page is that the month-grid is rendered, and wherever you have entries, a blue dot is displayed in the month grid. If you tap on a field with a blue dot, the date entry is displayed underneath the month grid. If you happen to run the current month, and there's a date entry for today, then that date entry is shown on load of that page, without you having to tap on today. Now if you navigate forward and backward, using the Next or Previous buttons, using the default AJAX navigation, the current date entry, if one exists, is not shown on load.

This issue is tracked with Oracle bug 14532665.

### Workaround:

After navigation, tap on today to see details of the date entry underneath the month grid.

## Dynamic Actions Do Not Fire on Regions with No Template

When you set a dynamic action to refresh a region where the region template is defined as **No Template**, the region will not be refreshed because **No Template** does not have a Region Id which is required by dynamic actions.

### Workaround:

Define a Template, for example "Blank" with the following:

```
<section id="#REGION_STATIC_ID#" #REGION_ATTRIBUTES#>
  <div>
    #BODY#
  </div>
</section>
```

## Issues Displaying AnyMap Maps in Chrome 21 and Later

If you experience problems displaying AnyMap maps in Chrome 21, where the region appears blank and no map is visible, try disabling the Pepper-based Flash Player. To disable the Pepper-base Flash Player in Chrome 21:

1. Launch the Chrome 21 browser.
2. Type `chrome://plugins` in search field.
3. Under the Flash plug-ins list, expand the Details node to the right of the Plug-ins title.
4. Locate the `PEPFLASHPLAYER.dll` Shockwave Flash plug-in, and click **Disable**.

**See Also:** *AnyMap Maps Display problem in Chrome 21*  
knowledgebase article on the AnyChart Support Center:  
<http://support.anychart.com/>

## Problems with SVG Charts

If you experience problems with an SVG chart, try upgrading the chart to a Flash chart.

To upgrade an SVG chart to Flash:

1. Navigate to the appropriate Page Definition.
2. Under Regions, click the region name. The region name displays to the left of SVG Chart.
3. On the Region Definition, click **Upgrade SVG Chart to Flash Chart** on the Tasks list.
4. Click **Upgrade**.

**See Also:** "Creating Charts" in *Oracle Application Express Application Builder User's Guide*

## Problems with Queries Containing a Bind Variable and a String with Two Dashes

Creating a report region based on a query that contains a string with two dashes may hinder the Application Express Engine's ability to handle item bind variable references. Consider the following example:

```
SELECT ename, job, sal, comm, deptno
FROM emp
WHERE instr ('-'||'-dash-'||-', 'uu') = 0
AND deptno = :P18_X
AND 1 = 1
```

### Workaround:

You can correct this behavior by changing the bind variable format. For example, to correct this issue in the previous example you would change :P18\_X to v('P18\_X').

## Importing Spreadsheet Data Containing Quotation Marks

If you import spreadsheet data by copying and pasting and a column value contains a double quotation mark, the data will not import correctly (for example, 54" Plasma Flat Screen). To avoid this problem, you have two options:

- Option 1:
  - a. Save the data in a delimited format (such as comma-delimited (.csv) or tab-delimited).
  - b. Use Import Text Data wizard to upload and import the saved file.
- Option 2:
  - a. Replace the quotation mark with two double quotation marks as shown in the following example:

```
54"" Plasma Flat Screen
```
  - b. Use the Import Spreadsheet Data wizard to import the file.

## Runtime Errors in an Application Imported from a Previous Release

If you export an application from an earlier Oracle Application Express release and then import and install it using the installation pages in Application Builder, in rare situations you may encounter runtime errors after the application installs.

These errors often manifest themselves as PL/SQL parser or execution errors pertaining to blocks of PL/SQL code embedded within application components. The installation process sometimes splits strings greater than 200 characters into multiple lines. For example, lines may split between PL/SQL keywords, or at other places that cause parsing errors.

**Workaround:**

If you encounter these types of errors and suspect the installation process has split large strings:

1. Isolate the failing component containing the suspect PL/SQL within the application by editing the failing page in Application Builder.
2. Locate the blocks of code that appear to split incorrectly.
3. Attempt to split the blocks of code in more appropriate places, or insert white space with the lines until no runtime errors are observed.
4. Export the application, import the export file, and then reinstall it.
5. Retain the new export file as a permanent backup copy.

### **DBA Authentication Restriction**

The following restriction applies to features in Oracle Application Express that require DBA authentication (for example, the Session report on the Database Monitor page). The DBA account used for authentication must not require double-quoting. In other words, it cannot be lower or mixed case.

### **Exporter Tool Support for Microsoft Access**

When migrating a Microsoft Access application to an Oracle Application Express application, you export your Microsoft Access metadata using the Exporter tool. Note that Exporter Tool for Microsoft Access supports Microsoft Access 97, Microsoft Access 2000, Microsoft Access 2002, Microsoft Access 2003, and Microsoft Access 2007.

### **Problem with Brazil Map**

There are problems creating a map of Brazil because the region *Distrito Federal* is not independent of the surrounding state *Goiás*. Consequently, any associated data is not displaying correctly on the map.

### **Issues Displaying Data Point in AnyChart**

To display all data points associated with an AnyChart 5 or higher chart, generated in Oracle Application Express release 4.0 or later, each data point must have a unique label. AnyChart 6 does not support the display of data points with duplicate labels, and the occurrence of duplicate labels will result in missing data points on your chart. Ensure that the chart series query returns a result set with a unique label for each data point to be displayed on your chart.

### **Themes Not Supporting Custom Legacy Calendars**

The following themes do not support custom calendars:

- Theme 8

- Theme 10
- Theme 13
- Theme 14
- Theme 15
- Theme 16
- Theme 18
- Theme 19
- Theme 20
- Theme 24
- Theme 42

## Interactive Report Region Hangs When Session Expires

If an application's Compatibility Mode is less than 5.0 and a session expires after the point when a page containing an interactive report region has been displayed and the user tries to interact with the interactive report, the report will either vanish or do nothing, depending on the kind of interaction.

## Upgrade Error with Websheet Objects

If you see errors prefixed with `Warning: Websheet schema` in the upgrade log, they are specific to a user's Websheet schema. Those schemas may have invalid Websheet objects that caused the Websheet object upgrade to fail. This should not impact the overall upgrade of Oracle Application Express.

## Accessibility Issues

This section describes accessibility bugs and known issues for Oracle Application Express.

### Issues Affecting the Development Environment

This section describes issues affecting your development environment:

- **Classic report regions, column aliases containing spaces cause invalid table markup**

For classic report regions, if the report query contains column aliases that contain spaces, Oracle Application Express will generate ID and HEADERS values that also contain spaces, which is invalid HTML. For IDs, spaces are invalid and for HEADERS, spaces are used to demarcate different HEADERS values. This invalid HTML may result in some assistive technologies (for example, screen readers) to no longer perceive the association between a cell in a table and its column header.

This issue is tracked with Oracle bug 14025528.

#### Workaround:

The workaround is to not use spaces in any column aliases defined in interactive report region queries. Then the ID and HEADERS values will be generated correctly, and will provide the association required by assistive technologies.

- **JustGage chart renders inaccessible SVG**

The JustGage chart plug-in has some SVG markup issues, resulting in incorrect behavior when using JAWS with Mozilla Firefox. For example, when viewing the Features region on the Team Development home page, you visually see a circular chart showing the percentage complete with the chart fill, and also with the text percentage value displayed in the middle of the circle. For JAWS users, this is announced as:

96% zero one zero zero.

(Where the value is 96%).

This issue is tracked with Oracle bug 20669080.

**Workaround:**

JAWS users should ignore the trailing information announced following the percentage value.

- **Team Development home page has minor cropping issue at 200% zoom**

When zoomed to 200%, the Milestones region displaying the text "x days to the final milestone of release x" is slightly cropped and only displays the upper half of the "of release x" text.

This issue is tracked with Oracle bug 20662230.

**Workaround:**

This is a minor issue and there is no workaround.

- **Page Designer > Property Editor > Yes / No type properties give confusing results with JAWS Form Field Dialog**

When tabbing through Page Designer properties, for example for a required property with the label Exclude Null Values with current value **No**, JAWS announces:

Exclude Null Values Required, No radio button checked, 2 of 2

However, a problem remains. When using the Form field dialog in JAWS (using the JAWS key + F5), both the radio and corresponding button are announced, resulting in confusing behavior. For the above field, the dialog shows the following four form fields:

- Exclude Null Values Yes radio button not checked
- Exclude Null Values Yes Button
- Exclude Null Values No radio button checked
- Exclude Null Values No Button

This issue is tracked with Oracle bug 19989903.

**Workaround:**

JAWS users should either use TAB or SHIFT+TAB to navigate through fields in the Property Editor, or if using the Form Dialog. Users should ignore the button listings for these properties.

- **Page up and page down navigation links on workspace login page missing link text**

The workspace login page has down and up same page links that serve as a navigation aid to move between lower and upper content that are missing link

text. These should have `aria-label="Jump down"` (or similar text), and likewise for the up link. Also, add `aria-hidden="true"` to the inline icon span to hide it from assistive technologies.

This issue is tracked with Oracle bug 20796641.

**Workaround:**

Use standard browser controls to navigate the page.

- **Dialogs launched from menu items do not return focus to menu**

When Application Express launches a dialog from a menu item (for example, from the Account menu on the navigation bar), then the dialog is subsequently closed, focus returns to the start of the page. However, focus should be returned to the menu button of the menu item that launched the dialog.

This issue is tracked with Oracle bug 20692698.

**Workaround:**

No workaround as such, users should be aware that their focus will be returned to the start of the page and they will need to navigate back to their current place of interest.

- **Page Definition page heading structure could be improved**

The heading structure on the Page Definition (for example, Page Rendering, Page Processing and Shared Components) uses an H1 for each column heading and then also uses H1 headings for the subsection headings in each column (for example, Page, Region, and so on.). Then subsequent subsections of these headings use H2's (for example, Display Point: After Header for Regions).

It would be better if the subsections in each column used H2's, then subsections of those use H3's, for a better heading hierarchy.

This issue is tracked with Oracle bug 20669555.

**Workaround:**

No workaround. Users with significant interest in heading structure (for example screen reader users) should just be aware of this same-level hierarchy when navigating the page.

- **Page Designer, Property Editor, Display Group headings should be buttons**

Currently in the Property Editor, the display groups are marked up as `DIV` elements that are focusable with the keyboard. When focused, users can navigate between display groups using UP and DOWN arrow keys, which aids keyboard support of the Property Editor. However with JAWS, when the `DIV` is focused, the display group title is announced twice, and the ARIA 'expanded' state is not initially announced when the display group first gets focus. It is however announced upon expand or collapse.

This issue is tracked with Oracle bug 20693220.

**Workaround:**

Users should be aware that the state is not announced upon first focus, and can either force announcement by pressing ENTER and making the group expand or collapse, or alternatively can pressing TAB to go to the next focusable element, which will either be the first field in the group (if expanded), or the next display group (if collapsed).

## Issues Affecting the Development Environment, Websheet Applications and Database Applications

This section describes issues affecting your development environment, Websheet applications and Database applications:

- **Some shuttles, radios and check boxes emit unnecessary <label> tags**

The compound native form items: shuttles, radio groups and check boxes, emit unnecessary label tags associated with the element that contains the compound elements.

This issue is tracked with Oracle bug 12683118.

**Workaround:**

No workaround required. This issue results no loss in functionality since the items all have accessible labels.

- **Single value / item check boxes render unnecessary fieldset and legend tags**

Rendering a native check box item, renders a `FIELDSET` tag that acts as a container for the group of check boxes and a `LEGEND` tag which gives the `FIELDSET` an accessible title. This works well for check boxes that have more than one check box in the group, but when the check box only has one check box, it is incorrect to render the `FIELDSET` and `LEGEND` in this case.

This issue is tracked with Oracle bug 18188460.

**Workaround:**

For single input check boxes, use the Simple Check box Item plug-in, available from Oracle Technology Network here:

<http://www.oracle.com/technetwork/developer-tools/apex/application-express/apex-plug-ins-182042.html>

- **Screen readers sometimes fail to read check box item's label in Internet Explorer**

Screen readers JAWS and NVDA sometimes fail to announce a check box item's label when using Microsoft Internet Explorer 10. The item's label should be read as the label for the group of check boxes the item contains. The item's label is not read when navigating to the check box group using the TAB key. However, it is read when using JAWS Form Field dialog (JAWS key + F5).

This issue is tracked with Oracle bug 19793650.

**Workaround:**

Consider using Mozilla Firefox instead of Microsoft Internet Explorer. This issue does not occur when using Mozilla Firefox.

- **Use as Row Header does not work when column selected is Plain Text**

Tabular forms have the capability to define a column as the Row Header, which then enhances the labeling of form fields in the tabular form by providing row context. However this fails in the case where the column defined as the row header is not itself a form element (for example, for Plain Text and read-only).

This issue is tracked with Oracle bug 20107536.

**Workaround:**

Developers must define an editable field as the Row Header, such as a Text Field.

- **Dialog close button announced twice with JAWS**

All dialogs that are opened in Oracle Application Express contain a close button, and Close is announced twice by JAWS.

This issue is tracked with Oracle bug 20608493.

**Workaround:**

This is a minor issue and there is no workaround.

## Issues Using Style AquaLight and AquaDark in AnyChart

When using the AquaLight or AquaDark style for 2D Column and Bar Flash charts to represent data ranging from a low value to a high value, shading may appear on top of the lower value, making it appear larger than the value it actually represents.

**Workaround:**

If you encounter this type of behavior when using the AquaLight or AquaDark style, edit the Chart Attributes and change the Style setting to one of the following:

- Silver
- Default

## Editing SVG Charts and Simple HTML Charts

Page Designer does not support the editing of SVG charts and simple HTML charts.

**Workaround:**

You can edit deprecated chart types, SVG charts and simple HTML, by viewing the page in Component View.

## Microsoft Internet Explorer 9 Displays Outdated Browser Message

If you are using Microsoft Internet Explorer 9 and you see an Outdated Browser message at the top of your screen, or if the layout of your legacy theme applications seem broken, then you may not be using the right browsing mode.

To choose the right browsing mode:

1. Press F12 on your keyboard, in the middle drop down.
2. Select **IE9** for the browser mode and **IE9 standards** for the document mode.

The page will then reload, and display correctly.

## Interactive Report Row Length Limit

Each row of interactive report is limited to 32,767 bytes.

## Popup LOVs in Tabular Forms Do Not Support Shared Static LOVs

When using popup LOVs or popup Key LOVs in tabular forms, developers can select a query defined with the item definition as the LOV source, or select a shared/named LOV. When selecting a named LOV, only query-based named LOVs are supported. Static names LOVs cannot be used with popup LOVs in tabular forms.

## Rendering Issues with Microsoft Internet Explorer 9 When Developer Toolbar Debug Enabled

Enabling the Runtime Developer Toolbar Debug option in Microsoft Internet Explorer 9 causes all Universal Theme pages to render incorrectly. Microsoft Internet Explorer 9 automatically limits the number of import statements in a CSS file and only loads in a few of the needed CSS files for the page. Non-debug mode does not have the same problem since the Universal Theme uses a CSS file which concatenates all the individual CSS modules together instead of importing them. To complete Microsoft Internet Explorer 9 testing with the Universal Theme, Oracle recommends that you use Microsoft Internet Explorer 10 or Microsoft Internet Explorer 11 which the emulated browser mode set to **IE9**.

## Incompatible Third Party Plug-Ins

The following third party plug-ins which have not been developed and supported by Oracle have been identified as being incompatible with Oracle Application Express release 5.0. Check if a newer version of the plug-in is available or remove the plug-in from your application.

**Table 4 Incompatible Third Party Plug-Ins**

Name	Type	Internal Name
ClariFit IR Column Grouping	Dynamic Action	COM.CLARIFIT.APEXPLUGIN.IR_COLUMN_GROUPING
ClariFit Dialog	Dynamic Action	COM.CLARIFIT.APEXPLUGIN.APEX_DIALOG
IR Column Groups	Dynamic Action	COM.AF.PLUGIN.JQ.IR_COLUMN_GROUPS
IR Freeze Header	Dynamic Action	COM.AF.PLUGIN.JQ.IRFREEZEHEADER
jquery.menu	Dynamic Action	COM.AF.PLUGIN.JQ.MENU
SkillBuilders Super LOV	Item Type	COM_SKILLBUILDERS_SUPER_LOV

Execute the following query as SYS, SYSTEM or any other privileged user to identify if a plug-in is in use.

```
select workspace, application_id, application_name, plugin_type, display_name,
name
  from apex_appl_plugins
 where name = '<replace with internal name>'
 order by workspace, application_id
```

## Incompatible Third Party JavaScript Libraries

The following third party JavaScript libraries which have not been developed and supported by Oracle have been identified as being not compatible with Oracle Application Express release 5.0. Remove the library from your application.

---

---

---

## Incompatible Third Party Browser Extension

The following third party Browser Extension (Addon) which has not been developed and supported by Oracle has been identified as being incompatible with Oracle Application Express release 5.0.

**Table 6 Incompatible Third Party Libraries**

Name	URL	Description
APEX Developer Addon (older versions)	<a href="https://apex.oracle.com/pls/apex/f?p=APEX_DEVELOPER_ADDON:ABOUT:0">https://apex.oracle.com/pls/apex/f?p=APEX_DEVELOPER_ADDON:ABOUT:0</a>	Older versions of this addon are known to cause breaking JavaScript errors with our own code editor component used throughout the Application Express development environment. The latest version of the addon resolves these issues. Ensure you update to the latest version to avoid such issues

## Displaying Event Titles in Legacy Calendars

Legacy calendar has two type of displaying event title (column or custom). When the custom type is used, there is no automatic migration of the customized display text.

This issue is tracked with Oracle bug 20798913.

### Workaround:

Change the SQL statement so that the custom column becomes a column that can be mapped to the Display Column attribute. Alternatively, use the Additional Information attribute to add a custom tooltip.

## Installation Fails when Using Oracle Workspace Manager

If Oracle Workspace Manager is in use in the Oracle Database where you attempt to install *Oracle Application Express*, the installation of indexes may fail with the following error:

```
ERROR at line 1:  
ORA-00604: error occurred at recursive SQL level 1  
ORA-06502: PL/SQL: numeric or value error: character string buffer too small  
ORA-06512: at "WMSYS.NO_VM_CREATE_PROC", line 147  
ORA-06512: at line 26
```

### Workaround:

Apply Database Patch 11061801 prior to attempting the install. Search for **11061801** on the Patches tab at support.oracle.com to download the patch.

## Issues Creating Forms Migration Project

When attempting to upload an XML file to a new or existing Forms Migration Project, you may receive a 500 - Internal Error. This issue is caused by an underlying database bug, with the parsing of a large XML file.

The issue is tracked with Oracle bug 12328800.

## Running Sample Application Migration Files Generates an Error

Running the Application Migration Workshop sample application migration files available under Tasks on the Application Migrations page results in an error.

This issue is tracked with bug 12328800.

## Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at

<http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

## Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit

<http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit

<http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

---

Oracle Application Express Release Notes, Release 5.0  
E39143-04

Copyright © 2003, 2015, Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.