Supported PB Features for Appeon Mobile (Mobile only)

Appeon® for PowerBuilder® 2015

FOR WINDOWS, UNIX & LINUX

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Contents

1 About This Book

1.1 Audience

This book is for PowerBuilder developers who use Appeon for PowerBuilder to build mobile applications. It describes what PowerBuilder features are supported and can be converted to mobile and what features are unsupported.

1.2 How to use this book

There are twelve chapters in this book.

Chapter 1: About This Book

A general description of this book.

Chapter 2: Basic Requirements and Recommendations

Please make sure your application meets the requirements outlined in this section.

Chapter 3: Enhancements and Differences

Lists Appeon security enhancements and Object/Control user operation differences.

Chapter 4: System Objects and Controls

Provides the supported feature list for PowerBuilder system objects and controls.

Chapter 5: PowerScript Reference

Provides the supported feature list for PowerBuilder programming language, and PowerScript.

Chapter 6: Embedded SQL

Provides the supported feature list for database servers, database operators, and database statements.

Chapter 7: Functions

Lists the supported and unsupported system functions, and describes what type of user functions are supported or unsupported.

Chapter 8: Events

Lists the supported event types and system messages.

Chapter 9: DataWindow

Gives a detailed list on the supported features for DataWindow.

Chapter 10: DBParm parameters in Database

Lists the supported DBParm parameters.

Chapter 11: Calling Web Services

Provides the supported interfaces that enable developers to extend the functionality of PowerBuilder.

Chapter 12: Undetected features

Lists Appeon unsupported feature that cannot be detected in Appeon Developer.

1.3 Related documents

Appeon provides the following user documents to assist you in understanding Appeon for PowerBuilder and its capabilities:

- Introduction to Appeon:

  Gives general introduction to Appeon for PowerBuilder and its editions.

- Getting Started (for Appeon Mobile):

  Guides you though installing PowerBuilder and Appeon for PowerBuilder, and developing and deploying a mobile application.

- New Features Guide:

  Introduces new features and changes in Appeon for PowerBuilder.

- Appeon Mobile Tutorials:

  Gives instructions on deploying, running, and debugging the mobile application, distributing native mobile apps, and configuring the Appeon Server cluster.

- Appeon Mobile (Offline) Tutorials:

  Gives instructions on setting up the Appeon Mobile (Offline) environment, and configuring, deploying, running, updating, and debugging the offline application.

- Appeon Installation Guide:

  Provides instructions on how to install Appeon for PowerBuilder successfully.

- Installation Guide on Cloud Platform:

  Provides instructions on how to install Appeon for PowerBuilder on the cloud-based platform such as Windows Azure and AWS EC2 and S3.

- Mobile UI Design & Development Guide:

  Introduces general guidelines on designing and developing the mobile app and UI.

- Migration Guidelines for Appeon Web:

  A process-oriented guide that illustrates the complete diagram of the Appeon Web migration procedure and various topics related to steps in the procedure, and includes a tutorial that walks you through the entire process of deploying a small PowerBuilder application to the Web.

- Supported PB Features:

  Provides a detailed list of supported PowerBuilder features which can be converted to the Web/Mobile with Appeon as well as which features are unsupported.

- Appeon Developer User Guide:

Provides instructions on how to use the Appeon Developer toolbar in Appeon for PowerBuilder.

- Workarounds & API Guide:

  Provides resolutions for unsupported features and various APIs to facilitate you to implement the features (including Web and mobile) that are not easy or impossible to implement in the PowerBuilder IDE.

- Appeon Workspace User Guide:

  Gives a general introduction on Appeon Workspace and provides detailed instructions on how to use it.

- Appeon Server Configuration Guide:

  Provides instructions on how to configure Appeon Server Monitor, establish connections between Appeon Servers and database servers, and configure AEM for maintaining Appeon Server and the deployed applications.

- Web Server Configuration Guide:

  Describes configuration instructions for different types of Web servers to work with the Appeon Server.

- Troubleshooting Guide:

  Provides information on troubleshooting issues; covering topics, such as product installation, application deployment, AEM, and Appeon application runtime issues.

- Appeon Performance Tuning Guide:

  Provides instructions on how to modify a PowerBuilder application to achieve better performance from its corresponding Web/mobile application.

- Testing Appeon Web Applications with QTP:

  Provides instructions on how to test Appeon Web applications with QTP.

1.4 If you need help

If you have any questions about this product or need assistance during the installation process, access the Technical Support Web site at http://www.appeon.com/support.

2 Basic Requirements and Recommendations

2.1 Overview

Appeon for PowerBuilder is able to deploy most PowerBuilder features to Web and/or mobile successfully. However there are still some unsupported features to remove, general guideline to follow and common pitfalls to avoid during the migration process. An application that contains unsupported features and does not adhere to some basic requirements and architectural requirements, may fail to migrate to the Web and/or mobile and suffer from performance problems.

This book will help you:

1. Figure out what PowerBuilder features are supported in Appeon and what are not;
2. Understand the Appeon enhanced features.

2.2 Basic Requirements

There are some basic requirements for the PowerBuilder application which is going to move to the mobile with Appeon.

1. The code is upgraded to be 100% compatible with Appeon-supported environment. Details refer to Chapter 3, *Installation Requirements* in *Installation Guide for .NET*.
2. The application can generate .exe files (with no errors) in the PowerBuilder version that you install Appeon Developer to.
3. The application has been tested thoroughly to be bug-free.

2.3 Requirements for Upgrading PowerBuilder Applications

The application code must be 100% PowerBuilder 9 or above code.

Non-PowerBuilder 9 or above code, including code that is defined as obsolete in PowerBuilder 9 or above help, must be replaced/upgraded before you can begin to use Appeon for PowerBuilder. In addition, supported PowerBuilder 9 or above code is demonstrated in the PowerBuilder Help. Undocumented syntax is unsupported.

All objects that are referenced by PBLs need to be available - PBLs cannot point to objects that do not exist. If a PBL does reference an unavailable object, the Appeon Application Deployment process will crash.

Upgrading DataWindow objects to PowerBuilder 9 or above

- In PowerBuilder 9 or above, the DataWindow column name cannot be null (in previous versions of PowerBuilder, this was allowed). Ensure that the column names of DataWindows are not null.
- In the earlier versions of PowerBuilder, the edit style of a DataWindow could be null. The user must make sure that after upgrading to PowerBuilder 9 or above, the edit styles of the DataWindows are not null.

- In the earlier versions of PowerBuilder, the user could use the GetChild function to provide a reference to a child DataWindow in the DataWindow itself.
- If an application is updated to PowerBuilder 9 or above, some DataWindow columns may have duplicate names. Duplicate names for columns in a DataWindow are unsupported.
- If a DataWindow is not correctly upgraded to a PowerBuilder 9 or above format, the problematic DataWindow(s) will be reported with the following information: PBL > DATAWINDOW NAME.

Upgrading Menu objects to PowerBuilder 9 or above

- With menu inheritance, the source code in earlier versions of PowerBuilder is different from the source code in PowerBuilder 9 or above. The user must open the menu objects with inheritance in PowerBuilder 9 or above and upgrade the objects to PowerBuilder 9 or above objects.

Upgrading color specification to PowerBuilder 9 or above

- A color value in an earlier PowerBuilder version may map to a different color of the same value in PowerBuilder 9 or above. If you prefer the color of the earlier version, be sure to verify that the correct colors are selected when upgrading the application to a PowerBuilder 9 or above application.

3 Enhancements and Differences

3.1 Appeon security enhancement

If your PowerBuilder application has no coded username/password verification during application startup, Appeon's built-in user group management can assist you. Refer to Section 2.2.3, “Configuration during security management” in *Appeon Server Configuration Guide for .NET* or Appeon Server Configuration Guide for J2EE for more information. When using Appeon's built-in security, you will be prompted to enter a user name and password in the Appeon Login dialog box.

3.2 Appeon Server open interfaces

Appeon Server open interfaces give users the opportunity to manage services provided by Appeon Server through PowerBuilder code. There are the following open interfaces provided by Appeon Server:

- **getAllClients** gets the IP addresses of all client machines which correspond to the active sessions that are opened for the specified application in the specified Appeon Server.
- **getAllSessions** returns the detail information of active sessions with XML format, which are opened for the specific application in the specific Appeon Server.
- **getSessionByID** returns the detail information of the specified session with XML format.
- **getSessionCount** gets the total number of active sessions in a specified Appeon Server or an Appeon Server cluster.
- **killAllSessions** kills all active sessions in an Appeon Server or an Appeon Server cluster and rolls back all associated transactions.
- **killSessions** kills the specified session(s) in an Appeon Server or an Appeon Server cluster and rolls back the associated transactions.
- **rollbackAllTransactions** rolls back all transactions in an Appeon Server or an Appeon Server cluster. To roll back all transactions in an Appeon Server cluster, you need to first configure the cluster in AEM.

For the syntax of Appeon Server open interfaces, refer to Chapter 4, *Appeon Server open interfaces* in *Workarounds & API Guide*.

3.3 Object/Control User Operation Differences

Controls

Controls in the mobile application get focus when SetFocus is triggered, while controls in the PowerBuilder application get focus when the LoseFocus event of the control (which is to lose focus) is triggered. For example, when focus is moved from Control A to Control B due to the user operation, on mobile, Control B gets focus when the SetFocus event of Control B is triggered, while in PowerBuilder, Control B gets focus when the LoseFocus event of Control

A is triggered. This does not affect the user operation, but may affect the execution result of script dependent on the focus.

Menu, Toolbar, Tab, TreeView, DropDownPictureListBox, or PictureListBox

The size of the pictures displayed in the Menu, Toolbar, Tab, TreeView, DropdownPictureListBox, or PictureListBox will always be 20px * 20px for a non-retina display. It will not adjust according to the actual height and width available as it does in PowerBuilder.

Motion effect

Motion effect of GIF files is unsupported.

Menu

The empty menu item will still be displayed in the mobile application, while will not be displayed in the PB application.

Opened windows will not be appended to the menu item, instead, they will be listed under an independent icon called Window List on the right of the Appeon Workspace titlebar.

For enhancements of controls and functions on the mobile device, refer to Section 2.3, “Enhanced Mobile Controls and Functions” in *Mobile UI Design & Development Guide (Mobile only)*.

3.4 DataWindow user operation differences

User interface differences

- In some cases, text in the DataWindow will appear truncated or UI elements may not be fully visible in the window. This is because the PowerBuilder units used to size the UI of the application, such as the DataWindow rows and columns, the Window object, etc, cannot be converted to the mobile perfectly.

- The number of data records displayed per page in deployed DataWindows may be different from that in PowerBuilder.

DataWindow modify/update

- When you click a date field in a DataWindow, the format of the date is changed to format yyyy-mm-dd, regardless of what the original display format is.

- If a cell in a DataWindow contains a value that is composed of only spaces and no other characters, the update to the database will fail (the value is updated to the database as an empty string rather than blank spaces). The retrieving functionality still works correctly and is not affected.

  Workaround: If a cell must be empty, make sure its value is an empty string, not a string composed of only one or more spaces. This issue affects Sybase ASE, Oracle, and Microsoft SQL Server. It does not affect Sybase ASA/SQL Anywhere.

- In PowerBuilder, if the user drags the scroll bar while a DataWindow field is being edited, AcceptText will not be executed for the field. In the mobile DataWindow, AcceptText is executed for the field.

Text fields

To input text in a DataWindow, you will need to tap the text field twice, first to highlight the text field with blue border, second to put focus to the field and bring up the virtual keyboard. And the position of text will be moved right by one pixel when the blue border displays.

More behavioral differences

Motion effect of GIF files is unsupported.

4 System Objects and Controls

4.1 Common Features

Table 4.1: Events

Support Level	Feature Name	Description
Supported	Clicked	
Supported	Constructor	
Supported	Destructor	
Supported	DoubleClicked	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Supported	GetFocus	In PowerBuilder, when a control gets focus and then loses focus, a series of LoseFocus and GetFocus events are triggered. In the mobile application, the rule is simplified as following: 1. For the control which has focus, when tapping on the window, the control will not lose focus. 2. For the control which has focus, when Hide() is called, the event order of the control (called Control A) is as following: a. Control A lost the focus. b. The window lost the focus. c. The control whose TabOrder is in the first place gets the focus (If the TabOrder of all controls is 0, Control A still gets the focus, even if it is invisible.)
Unsupported	Help	
Supported on Web Only	Key	This event is supported in the Appeon Web application, but unsupported in the mobile application.
Supported	LostFocus	
Supported	LostFocus	
Unsupported	Other	
Supported	RButtonDown	In the mobile application, you will need to turn on the Right-click mode in the Assistive Touch Bar, so

Support Level	Feature Name	Description
		that RButtonDown event will be triggered, but with the following exceptions: 1. For SingleLineEdit and MultiLineEdit controls, no RButtonDown event will be triggered. 2. For TreeView, ListView, DropDownListBox, PictureDropDownListBox, and DataWindow, when they are in the editing state, no RButtonDown event will be triggered.

Table 4.2: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Supported	Clear	
Supported	Copy	
Supported	Cut	
Supported	Drag	In the mobile application, you may utilize the Assistive Touch Bar to avoid conflicts between drag and scroll. Please see Section 2.2, “Event-handling model” in *Mobile UI Design & Development Guide (Mobile only)*. Avoid using Drag in the following situations, otherwise Drag will not take effect: 1. In the control's LButtonDown event, avoid calling Drag(Begin) to drag another control. 2. If Drag is triggered by Postevent, avoid triggering it before LButtonUp. The general rule is to avoid triggering Drag to drag other controls before LButtonUp. If no drag icon is specified, the default icon designed by Appeon Mobile will be used. The drag icon can be in any image format that is supported by Appeon Mobile, while in Windows, only ICO format is supported.
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	Move	

Support Level	Feature Name	Description
Supported	Paste	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	**Mobile platform difference:** For Android: Print is unsupported. For iOS: Print is unsupported for all controls except for DataWindow control.
Supported	ReplaceText	
Supported	Resize	
Supported	SelectedLength	
Supported	SelectedStart	
Supported	SelectedText	If the second parameter is larger than the length of the remaining string, the number of the remaining string is returned, but in PowerBuilder, the second parameter is returned.
Supported	SelectText	If the second parameter is larger than the selected string length, the number of characters actually selected is returned, but in PowerBuilder, the second parameter is returned. In Windows, Newline and Carriage Return display as two bytes (\r\n), but in iOS and Android, they display as one byte (\n). This causes difference in multi-line text, for example, for a MultiLineEdit that has contents like "<newline>test1", selecttext(3,4) selects "test" in Windows, while selects "est1" in iOS and Android.
Supported	SetFocus	
Supported	SetPosition	
Supported	SetRedraw	In PowerBuilder applications, SetRedraw() is mainly to optimize the client performance, which is often called in pairs in a function or an event. In the mobile application, SetRedraw() will be handled differently: SetRedraw() should be used in pairs, and between SetRedraw(false) and SetRedraw(true) there should be no manual intervention such as clicking a button or popping up a MessageBox etc.

Support Level	Feature Name	Description
		UI painting of the corresponding object is suspended when SetRedraw(false) is executed, and will start painting again according to the latest properties after SetRedraw(true) is executed. Other than the above difference, SetRedraw() can be used in the same way and achieve the same result as in PowerBuilder.
Supported	Show	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.3: Properties

Support Level	Feature Name	Description
Unsupported	Accelerator	
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported	BackColor	The RGB color will be displayed the same in iOS and Android as in Windows, but the system color such as ButtonFace may be mapped to a different color in iOS and Android, in order to conform to the mobile UI style.
Supported	Border	
Supported	BorderStyle	When BorderStyle is set to Box, the border displays the same in iOS and Android as in PowerBuilder; but when set to the other styles, the border will always display as rounded rectangle.
Supported	BringToTop	
Unsupported	ClassDefinition	
Supported	DragAuto	
Supported	DragIcon	Other than the situations below, DragIcon is consistent with PowerBuilder. If DragIcon is not specified, use the default DragIcon and add the glow effect. If use the default icon in PowerBuilder as DragIcon, add the glow effect to DragIcon.
Supported	Enabled	

Support Level	Feature Name	Description
Supported	FaceName	If the specified font also exists in iOS or Android, then the same font will be used, otherwise the font Helvetica will be used.
Supported	FontCharSet	Only ANSI character set is supported, and the display effect of other character sets may not be displayed as expected.
Supported	FontFamily	It depends on the FaceName. If the value is not consistent with the font corresponding to FaceName, it takes no effect.
Supported	FontPitch	It depends on the FaceName. If the value is not consistent with the FontPitch value of the font corresponding to FaceName, it takes no effect.
Supported	Height	
Supported	HScrollBar	The scrollbar will be automatically displayed as the mobile-style scrollbar, rather than the Windows-style scrollbar.
Supported	Italic	The Italic property is font-dependent in iOS or Android, and not all of the fonts support italic.
Supported on Web Only	Pointer	
Supported	RightToLeft	
Supported	TabOrder	Switching focus via the Tab key is not supported. When a window opens, the focus will be automatically placed onto the control with the smallest TabOrder value (TabOrder>0).
Supported	Tag	
Supported	Text	For "&" character in iOS and Android: 1. Shortcut key operation is unsupported for all the controls in iOS and Android. 2. If there are other characters following the "&" character, the "&" character will not display; and the following characters will not have underlines. 3. The display rule for consecutive "&" characters: a. The only one "&" character will not display;

Support Level	Feature Name	Description
		b. An odd number (n) of consecutive "&" characters will display this number of "&" characters: (n-1)/2; c. An even number (n) of consecutive "&" characters will display this number of "&" characters: n/2. Additionally, the following two situations also use the above rules: i. Controls in the DataWindow with Text property, such as Button, Text, GroupBox. ii. The "&" character used in the string in the Expression property of the Computed Filed object.
Supported	TextColor	Refer to the BackColor property.
Supported	TextSize	
Supported	Underline	The Underline property is font-dependent in iOS and Android, and not all of the fonts support underline.
Supported	Visible	
Supported	VScrollBar	The scrollbar will be automatically displayed as the mobile-style scrollbar, rather than the Windows-style scrollbar.
Supported	Weight	The Weight property is font-dependent in iOS and Android, and not all of the fonts support bold.
Supported	Width	
Supported	X	
Supported	Y	

4.2 Controls

4.2.1 Supported Controls

4.2.1.1 CheckBox

Table 4.4: Events

Support Level	Feature Name	Description
Supported	Clicked	

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Supported	GetFocus	
Unsupported	Help	
Supported	LoseFocus	
Unsupported	Other	
Supported	RButtonDown	See Common Features.

Table 4.5: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Supported	Drag	See Common Features.
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	Move	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	See Common Features.
Supported	Resize	
Supported	SetFocus	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	Show	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.6: Properties

Support Level	Feature Name	Description
Supported	Automatic	

Support Level	Feature Name	Description
Supported	BackColor	See Common Features.
Supported	BorderStyle	See Common Features.
Supported	BringToTop	
Supported	Checked	
Unsupported	ClassDefinition	
Supported	DragAuto	
Supported	DragIcon	
Supported	Enabled	
Supported	FaceName	See Common Features.
Supported	FontCharSet	See Common Features.
Supported	FontFamily	See Common Features.
Supported	FontPitch	See Common Features.
Supported	Height	
Supported	Italic	See Common Features.
Supported	LeftText	
Supported on Web Only	Pointer	See Common Features.
Supported	RightToLeft	
Supported	TabOrder	See Common Features.
Supported	Tag	
Supported	Text	See Common Features.
Supported	TextColor	See Common Features.
Supported	TextSize	
Supported	ThirdState	The following rules are the correlations between ThirdState and ThreeState properties: 1. If the ThreeState property is False, the ThirdState property will be ignored, and the "Checked" property determines the state of CheckBox. 2. If the ThreeState property is True, and the ThirdState property is True; then the CheckBox control is in the third state, and the "Checked" property is automatically set to True. 3. If the ThreeState property is True, and the ThreeState property is False; then the CheckBox

Support Level	Feature Name	Description
		control is in the unchecked state, and the "Checked" property is automatically set to False. 4. If the ThreeState property is True, and the "Checked" property is set separately; the Checkbox can be in the checked or unchecked state, and this will not affect the ThirdState property.
Supported	ThreeState	
Supported	UnderLine	See Common Features.
Supported	Visible	
Supported	Weight	See Common Features.
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.2 CommandButton

Table 4.7: Events

Support Level	Feature Name	Description
Supported	Clicked	
Supported	Constructor	
Supported	Destructor	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Supported	GetFocus	
Unsupported	Help	
Supported	LoseFocus	
Unsupported	Other	
Supported	RButtonDown	See Common Features.

Table 4.8: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Supported	Drag	See Common Features.

Support Level	Feature Name	Description
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	Move	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	
Supported	Resize	
Supported	SetFocus	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	Show	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.9: Properties

Support Level	Feature Name	Description
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported	BringToTop	
Unsupported	Cancel	
Unsupported	ClassDefinition	
Unsupported	Default	
Supported	DragAuto	
Supported	DragIcon	
Supported	Enabled	
Supported	FaceName	See Common Features.
Unsupported	FlatStyle	
Supported	FontCharSet	See Common Features.
Supported	FontFamily	See Common Features.
Supported	FontPitch	See Common Features.
Supported	Height	
Supported	Italic	See Common Features.

Support Level	Feature Name	Description
Supported on Web Only	Pointer	See Common Features.
Supported	TabOrder	See Common Features.
Supported	Tag	
Supported	Text	
Supported	TextSize	
Supported	Underline	See Common Features.
Supported	Visible	
Supported	Weight	See Common Features.
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.3 DatePicker

Table 4.10: Events

Support Level	Feature Name	Description
Supported	Clicked	
Supported	CloseUp	
Supported	Constructor	
Supported	Destructor	
Supported	DoubleClicked	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Unsupported	DropDown	
Supported	GetFocus	
Unsupported	Help	
Supported	LoseFocus	
Unsupported	Other	
Unsupported	PreCreateWindow	
Supported	RButtonDown	See Common Features.
Unsupported	UserString	
Supported	ValueChanged	

Table 4.11: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Supported	Drag	See Common Features.
Unsupported	GetCalendar	
Unsupported	GetContextService	
Supported	GetParent	
Supported	GetText	
Supported	GetToday	
Supported	GetValue	
Supported	Hide	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	
Supported	Resize	
Supported	SetFocus	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	SetToday	
Supported	SetValue	
Supported	Show	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.12: Properties

Support Level	Feature Name	Description
Unsupported	Accelerator	
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Unsupported	AllowEdit	It is recommended that you turn on the ShowUpDown property, so that the users can flick the wheel of the picker to change the value, instead of editing the value.
Supported	Border	
Supported	BorderStyle	See Common Features.

Support Level	Feature Name	Description
Supported	BringToTop	
Supported	CalendarBackColor	
Unsupported	CalendarFontCharset	
Unsupported	CalendarFontFamily	
Unsupported	CalendarFontName	
Unsupported	CalendarFontPitch	
Unsupported	CalendarFontWeight	
Unsupported	CalendarItalic	
Unsupported	CalendarTextColor	
Unsupported	CalendarTextSize	
Unsupported	CalendarTitleBackColor	
Unsupported	CalendarTitleTextColor	
Unsupported	CalendarTrailingTextColor	
Unsupported	CalendarUnderline	
Unsupported	ClassDefinition	
Supported	CustomFormat	In Appeon Mobile, the following format is always used "YYYY-MM-DD".
Supported	DateValue	
Supported	DragAuto	
Supported	DragIcon	
Supported	DropDownRight	
Supported	Enabled	
Supported	FaceName	See Common Features.
Supported	FirstDayOfWeek	
Unsupported	FirstName	
Supported	FontCharSet	See Common Features.
Supported	FontFamily	See Common Features.
Supported	FontPitch	See Common Features.
Supported	FontWeight	
Supported	Format	
Supported	Height	
Supported	Italic	See Common Features.
Supported	MaxDate	
Supported	MinDate	

Support Level	Feature Name	Description
Supported on Web Only	Pointer	See Common Features.
Supported	RightToLeft	
Supported	ShowUpDown	When the ShowUpDown property is set to true, a down arrow will display on the right end, and when the arrow is tapped, a mobile-style picker will display and users can flick the wheels of the picker to select the desired value.
Supported	TabOrder	See Common Features.
Supported	Tag	
Supported	Text	
Supported	TextSize	
Supported	TimeValue	
Supported	TodayCircle	
Supported	TodaySection	
Supported	Underline	See Common Features.
Supported	Value	
Supported	Visible	
Supported	WeekNumbers	
Supported	Width	If the width is not enough to display the value completely, the user can swipe left or right on the DatePicker control to view the remaining part.
Supported	X	
Supported	Y	

4.2.1.4 DropDownListBox

Table 4.13: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	
Supported	DoubleClicked	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	

Support Level	Feature Name	Description
Supported	GetFocus	
Unsupported	Help	
Supported	LoseFocus	
Supported	Modified	
Unsupported	Other	
Supported	RButtonDown	See Common Features.
Supported	SelectionChanged	

Table 4.14: Functions

Support Level	Feature Name	Description
Supported	AddItem	
Supported	ClassName	
Supported	Clear	
Supported	Copy	
Supported	Cut	
Supported	DeleteItem	
Unsupported	DirList	
Unsupported	DirSelect	
Supported	Drag	See Common Features.
Supported	FindItem	
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	InsertItem	
Supported	Move	
Supported	Paste	
Supported	PointerX	
Supported	PointerY	
Unsupported	Position	
Supported	PostEvent	
Supported on Web Only	Print	
Supported	ReplaceText	
Supported	Reset	

Support Level	Feature Name	Description
Supported	Resize	
Supported	SelectedLength	
Supported	SelectedStart	
Supported	SelectedText	
Supported	SelectItem	
Supported	SelectText	See Common Features.
Supported	SetFocus	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	Show	
Supported	Text	
Supported	TotalItems	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.15: Properties

Support Level	Feature Name	Description
Unsupported	Accelerator	
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported	AllowEdit	
Supported	AutoHScroll	
Supported	BackColor	See Common Features.
Supported	Border	
Supported	BorderStyle	See Common Features.
Supported	BringToTop	
Unsupported	ClassDefinition	
Supported	DragAuto	
Supported	DragIcon	
Supported	Enabled	
Supported	FaceName	See Common Features.
Supported	FontCharset	See Common Features.
Supported	FontFamily	See Common Features.
Supported	FontPitch	See Common Features.

Support Level	Feature Name	Description
Supported	Height	
Supported	HScollBar	See Common Features.
Supported	ImeMode	
Supported	Italic	See Common Features.
Supported	Item[]	
Supported	Limit	
Supported on Web Only	Pointer	See Common Features.
Supported	RightToLeft	
Supported	ShowList	
Supported	Sorted	
Supported	TabOrder	See Common Features.
Supported	Tag	
Supported	Text	
Supported	TextColor	See Common Features.
Supported	TextSize	
Supported	Underline	See Common Features.
Supported	Visible	
Supported	VScrollBar	See Common Features.
Supported	Weight	See Common Features.
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.5 DropDownPictureListBox

Table 4.16: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	
Supported	DoubleClicked	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	

Support Level	Feature Name	Description
Supported	GetFocus	
Unsupported	Help	
Supported	LoseFocus	
Supported	Modified	
Unsupported	Other	
Supported	RButtonDown	See Common Features.
Supported	SelectionChanged	

Table 4.17: Functions

Support Level	Feature Name	Description
Supported	AddItem	
Supported	AddPicture	
Supported	ClassName	
Supported	Clear	
Supported	Copy	
Supported	Cut	
Supported	DeleteItem	
Supported	DeletePictrues	
Supported	DeletePicture	
Unsupported	DirList	
Unsupported	DirSelect	
Supported	Drag	See Common Features.
Supported	FindItem	
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	InsertItem	
Supported	Move	
Supported	Paste	
Supported	PointerX	
Supported	PointerY	
Unsupported	Position	
Supported	PostEvent	
Unsupported	Print	
Supported	ReplaceText	

Support Level	Feature Name	Description
Supported	Reset	
Supported	Resize	
Supported	SelectedLength	
Supported	SelectedStart	
Supported	SelectedText	
Supported	SelectItem	
Supported	SelectText	See Common Features.
Supported	SetFocus	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	Show	
Supported	Text	
Supported	TotalItems	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.18: Properties

Support Level	Feature Name	Description
Unsupported	Accelerator	
Supported	AccessibleDescription	
Supported	AccessibleName	
Supported	AccessibleRole	
Supported	AllowEdit	
Supported	AutoHScroll	
Supported	BackColor	See Common Features.
Supported	Border	
Supported	BorderStyle	See Common Features.
Supported	BringToTop	
Unsupported	ClassDefinition	
Supported	DragAuto	
Supported	DragIcon	
Supported	Enabled	
Supported	FaceName	See Common Features.
Supported	FontCharset	See Common Features.
Supported	FontFamily	See Common Features.

Support Level	Feature Name	Description
Supported	FontPitch	See Common Features.
Supported	Height	
Supported	HScrollBar	See Common Features.
Supported	ImeMode	
Supported	Italic	See Common Features.
Supported	Item[]	
Supported	ItemPictureIndex[]	
Supported	Limit	
Supported	PictureHeight	
Unsupported	PictureMaskColor	
Supported	PictureName[]	
Supported	PictureWidth	
Supported on Web Only	Pointer	See Common Features.
Supported	RightToLeft	
Supported	ShowList	
Supported	Sorted	
Supported	TabOrder	See Common Features.
Supported	Tag	
Supported	Text	
Supported	TextColor	See Common Features.
Supported	TextSize	
Supported	Underline	See Common Features.
Supported	Visible	
Supported	VScrollBar	See Common Features.
Supported	Weight	See Common Features.
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.6 EditMask

Table 4.19: Events

Support Level	Feature Name	Description
Supported	Constructor	

Support Level	Feature Name	Description
Supported	Destructor	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Supported	GetFocus	
Unsupported	Help	
Supported	LoseFocus	
Supported	Modified	
Unsupported	Other	
Supported	RButtonDown	See Common Features.

Table 4.20: Functions

Support Level	Feature Name	Description
Unsupported	CanUndo	
Supported	ClassName	
Supported	Clear	
Supported	Copy	
Supported	Cut	
Supported	Drag	See Common Features.
Unsupported	GetContextService	
Unsupported	GetData	
Supported	GetParent	
Supported	Hide	
Unsupported	LineCount	
Unsupported	LineLength	
Supported	Move	
Supported	Paste	
Supported	PointerX	
Supported	PointerY	
Unsupported	Position	
Supported	PostEvent	
Unsupported	Print	
Supported	ReplaceText	
Supported	Resize	

Support Level	Feature Name	Description
Unsupported	Scroll	
Supported	SelectedLength	
Unsupported	SelectedLine	
Supported	SelectedStart	
Supported	SelectedText	
Supported	SelectText	
Supported	SetFocus	
Supported	SetMask	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	Show	
Unsupported	TextLine	
Supported	TriggerEvent	
Supported	TypeOf	
Unsupported	Undo	

Table 4.21: Properties

Support Level	Feature Name	Description
Unsupported	Accelerator	
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported	Alignment	
Supported	AutoHScroll	
Unsupported	AutoSkip	
Unsupported	AutoVScroll	
Supported	BackColor	See Common Features.
Supported	Border	
Supported	BorderStyle	See Common Features.
Supported	BringToTop	
Unsupported	CalendarBackColor	
Unsupported	CalendarTextColor	
Unsupported	CalendarTitleBackColor	
Unsupported	CalendarTitleTextColor	
Unsupported	CalendarTrailingTextColor	

Support Level	Feature Name	Description
Unsupported	ClassDefinition	
Supported	DisplayData	
Supported	DisplayOnly	The DisplayOnly property in iOS or Android is different from that in PowerBuilder. In iOS and Android, DisplayOnly behaves like Disable, but it will not grey out like Disable. The Spin arrow will not take effect when clicked.
Partially Supported	DragAuto	
Unsupported	DragItem	
Unsupported	DropDownCalendar	
Unsupported	DropDownRight	
Supported	Enabled	
Supported	FaceName	See Common Features.
Supported	FontCharSet	See Common Features.
Supported	FontFamily	See Common Features.
Supported	FontPitch	See Common Features.
Supported	Height	
Supported	HideSelection	
Unsupported	HScrollBar	
Unsupported	IgnoreDefaultButton	
Unsupported	ImeMode	
Unsupported	Increment	
Supported	Italic	See Common Features.
Supported	Limit	
Supported	Mask	When this property is set to the number, the user can only enter one digit at a time using the Android keyboard, because every time after the number key is tapped, the number keyboard will be automatically switched to the letter keyboard. This is an issue with the system input method. The user can install the Google input method to work around this issue.
Supported	MaskDataType	
Supported	MinMax	
Supported on Web Only	Pointer	See Common Features.

Support Level	Feature Name	Description
Supported	RightToLeft	
Supported	Spin	When the Spin property is set to true, the EditMask control will be defined as a spin control with a down arrow on the right end. When the down arrow is tapped, a mobile-style picker will display and users can flick the wheel of the picker to find the desired value.
Unsupported	TabOrder	See Common Features.
Unsupported	TabStop[]	
Supported	Tag	
Supported	Text	If the text is too long and cannot fit into the visible area of the EditMask, the overflow text will be truncated and an ellipse is added.
Supported	TextCase	
Supported	TextColor	See Common Features.
Supported	TextSize	
Supported	Underline	See Common Features.
Unsupported	UseCodeTable	
Supported	Visible	
Unsupported	VScrollBar	
Supported	Weight	See Common Features.
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.7 GroupBox

Table 4.22: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	
Unsupported	Help	
Unsupported	Other	

Table 4.23: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Supported	Drag	See Common Features.
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	Move	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	
Supported	Resize	
Supported	SetFocus	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	Show	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.24: Properties

Support Level	Feature Name	Description
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported	BackColor	See Common Features.
Supported	BorderStyle	See Common Features.
Supported	BringToTop	
Unsupported	ClassDefinition	
Supported	DragAuto	
Supported	DragIcon	
Supported	Enabled	
Supported	FaceName	See Common Features.
Supported	FontCharSet	See Common Features.
Supported	FontFamily	See Common Features.
Supported	FontPitch	See Common Features.

Support Level	Feature Name	Description
Supported	Height	
Supported	Italic	See Common Features.
Supported on Web Only	Pointer	See Common Features.
Supported	RightToLeft	
Supported	TabOrder	See Common Features.
Supported	Tag	
Supported	Text	
Supported	TextColor	See Common Features.
Supported	TextSize	
Supported	Underline	See Common Features.
Supported	Visible	
Supported	Weight	See Common Features.
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.8 HProgressBar

Table 4.25: Events

Support Level	Feature Name	Description
Supported	Clicked	
Supported	Constructor	
Supported	Destructor	
Supported	DoubleClicked	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Supported	GetFocus	
Unsupported	Help	
Supported	LoseFocus	
Unsupported	Other	
Supported	RButtonDown	See Common Features.

Table 4.26: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Supported	Drag	See Common Features.
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	Move	
Supported	OffsetPos	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	
Supported	Resize	
Supported	SetFocus	
Supported	SetPosition	
Supported	SetRange	
Supported	SetRedraw	See Common Features.
Supported	Show	
Supported	Steplt	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.27: Properties

Support Level	Feature Name	Description
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported	BringToTop	
Unsupported	ClassDefinition	
Supported	DragAuto	
Supported	DragIcon	
Supported	Height	
Supported	MaxPosition	
Supported	MinPosition	

Support Level	Feature Name	Description
Supported on Web Only	Pointer	See Common Features.
Supported	Position	
Supported	SetStep	
Unsupported	SmoothScroll	
Supported	TabOrder	See Common Features.
Supported	Tag	
Supported	Visible	
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.9 HTrackBar

Table 4.28: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Supported	GetFocus	
Unsupported	Help	
Supported	LineLeft	
Supported	LineRight	
Supported	LoseFocus	
Supported	Moved	
Unsupported	Other	
Supported	PageLeft	
Supported	PageRight	
Supported	RButtonDown	See Common Features.

Table 4.29: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Supported	Drag	See Common Features.
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	Move	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	
Supported	Resize	
Supported	SelectionRange	
Supported	SetFocus	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	Show	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.30: Properties

Support Level	Feature Name	Description
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported	BringToTop	
Unsupported	ClassDefinition	
Supported	DragAuto	
Supported	DragIcon	
Supported	Height	
Supported	LineSize	
Supported	MaxPosition	
Supported	MinPosition	
Supported	PageSize	

Support Level	Feature Name	Description
Supported on Web Only	Pointer	See Common Features.
Supported	Position	
Supported	Slider	
Supported	SliderSize	
Supported	TabOrder	See Common Features.
Supported	Tag	
Supported	TickFrequency	
Supported	TickMarks	
Supported	Visible	
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.10 Line

Table 4.31: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	

Table 4.32: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	Move	
Supported	Resize	
Supported	Show	
Supported	TypeOf	

Table 4.33: Properties

Support Level	Feature Name	Description
Supported	BeginX	

Support Level	Feature Name	Description
Supported	BeginY	
Unsupported	ClassDefinition	
Supported	EndX	
Supported	EndY	
Supported	LineColor	
Supported	LineStyle	
Supported	LineThickness	
Supported	Tag	
Supported	Visible	

4.2.1.11 ListBox

Table 4.34: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	
Supported	DoubleClicked	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Supported	GetFocus	
Unsupported	Help	
Supported	LoseFocus	
Unsupported	Other	
Supported	RButtonDown	See Common Features.
Supported	SelectionChanged	

Table 4.35: Functions

Support Level	Feature Name	Description
Supported	AddItem	
Supported	ClassName	
Supported	DeleteItem	
Unsupported	DirList	
Unsupported	DirSelect	
Supported	Drag	See Common Features.

Support Level	Feature Name	Description
Supported	FindItem	
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	InsertItem	
Supported	Move	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	
Supported	Reset	
Supported	Resize	
Supported	SelectedIndex	
Supported	SelectedItem	
Supported	SelectItem	
Supported	SetFocus	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	SetState	
Supported	SetState	
Supported	SetTop	
Supported	Show	
Supported	State	
Supported	Text	
Supported	Top	
Supported	TotalItems	
Supported	TotalSelected	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.36: Properties

Support Level	Feature Name	Description
Unsupported	Accelerator	
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	

Support Level	Feature Name	Description
Unsupported	AccessibleRole	
Supported	BackColor	
Supported	Border	
Supported	BorderStyle	See Common Features.
Supported	BringToTop	
Unsupported	ClassDefinition	
Unsupported	DisableNoScroll	
Supported	DragAuto	
Supported	DragIcon	
Supported	Enabled	
Supported on Web Only	ExtendedSelect	
Supported	FaceName	
Supported	FontCharSet	See Common Features.
Supported	FontFamily	See Common Features.
Supported	FontPitch	See Common Features.
Supported	Height	
Supported	HScrollBar	See Common Features.
Supported	Italic	
Supported	Item[ ]	
Supported	MultiSelect	
Supported on Web Only	Pointer	See Common Features.
Supported	RightToLeft	
Supported	Sorted	
Supported	TabOrder	See Common Features.
Unsupported	TabStop[]	
Supported	Tag	
Supported	TextColor	
Supported	TextSize	
Supported	Underline	See Common Features.
Supported	Visible	
Supported	VScrollBar	See Common Features.
Supported	Weight	See Common Features.

Support Level	Feature Name	Description
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.12 ListView

Table 4.37: Events

Support Level	Feature Name	Description
Supported on Web Only	BeginDrag	
Supported	BeginLabelEdit	
Supported on Web Only	BeginRightDrag	
Supported	Clicked	
Supported	ColumnClick	
Supported	Constructor	
Supported	DeleteAllItems	
Supported	DeleteItem	
Supported	Destructor	
Supported	DoubleClicked	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Supported	EndLabelEdit	
Supported	GetFocus	
Unsupported	Help	
Supported	InsertItem	
Supported	ItemActivate	
Supported	ItemChanged	
Supported	ItemChanging	
Supported on Web Only	Key	
Supported	LoseFocus	

Support Level	Feature Name	Description
Unsupported	Other	
Supported	RightClicked	
Supported	RightDoubleClicked	
Unsupported	Sort	

Table 4.38: Functions

Support Level	Feature Name	Description
Supported	AddColumn	
Supported	AddItem	
Supported	AddLargePicture	
Supported	AddSmallPicture	
Supported	AddStatePicture	
Partially Supported	Arrange	The items will always be arranged in the Appeon rule.
Supported	ClassName	
Supported	DeleteColumn	
Supported	DeleteColumns	
Supported	DeleteItem	
Supported	DeleteItems	
Supported	DeleteLargePicture	
Supported	DeleteLargePictures	
Supported	DeleteSmallPicture	
Supported	DeleteSmallPictures	
Supported	DeleteStatePicture	
Supported	DeleteStatePictures	
Supported	Drag	See Common Features.
Supported	EditLabel	
Supported	FindItem	Currently, it is only supported to search for the next item based upon its label. Searching for the next item relative to a specific location or based upon its state is unsupported.
Supported	GetColumn	
Unsupported	GetContextService	
Supported	GetItem	
Unsupported	GetOrigin	
Supported	GetParent	

Support Level	Feature Name	Description
Supported	Hide	
Supported	InsertColumn	
Supported	InsertItem	
Supported	Move	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	
Supported	Resize	
Supported	SelectedIndex	
Supported	SetColumn	
Supported	SetFocus	
Supported	SetItem	
Supported	SetOverlayPicture	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	Show	
Supported	Sort	
Supported	TotalColumns	
Supported	TotalItems	
Supported	TotalSelected	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.39: Properties

Support Level	Feature Name	Description
Unsupported	Accelerator	
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported	AutoArrange	
Supported	BackColor	See Common Features.
Supported	Border	
Supported	BorderStyle	See Common Features.
Supported	BringToTop	

Support Level	Feature Name	Description
Supported on Web Only	ButtonHeader	
Supported	CheckBoxes	
Unsupported	ClassDefinition	
Supported	DeleteItems	
Supported	DragAuto	
Supported	DragIcon	
Supported	EditLables	
Supported	Enabled	
Supported on Web Only	ExtendedSelect	
Supported	FaceName	See Common Features.
Supported	FixedLocations	
Supported	FontCharSet	See Common Features.
Supported	FontFamily	See Common Features.
Supported	FontPitch	See Common Features.
Supported	FullRowSelect	
Supported	GridLines	
Supported on Web Only	HeaderDragDrop	
Supported	Height	
Supported	HideSelection	
Supported on Web Only	ImeMode	
Supported	Italic	See Common Features.
Supported	Item[]	
Supported	ItemPictureIndex[]	
Supported on Web Only	LabelWrap	
Supported	LargePictureHeight	This value cannot be set to 0 or negative.
Supported	LargePictureMaskColor	
Supported	LargePictureName[]	

Support Level	Feature Name	Description
Supported	LargePictureWidth	This value cannot be set to 0 or negative.
Unsupported	LayoutRTL	
Supported	OneClickActivate	
Supported on Web Only	Pointer	See Common Features.
Supported	RightToLeft	
Supported	Scrolling	
Supported	ShowHeader	
Supported	SmallPictureHeight	This value cannot be set to 0 or negative.
Supported	SmallPictureMaskColor	
Supported	SmallPictureName[]	
Supported	SmallPictureWidth	This value cannot be set to 0 or negative.
Supported	SortType	
Unsupported	StatePictureHeight	
Supported	StatePictureMaskColor	
Supported	StatePictureName[]	
Unsupported	StatePictureWidth	
Supported	TabOrder	See Common Features.
Supported	Tag	
Supported	TextColor	See Common Features.
Supported	TextSize	
Supported on Web Only	TrackSelect	
Supported	TwoClickActivate	
Supported	Underline	See Common Features.
Supported on Web Only	UnderlineCold	
Supported on Web Only	UnderlineHot	
Supported	View	
Supported	Visible	
Supported	Weight	See Common Features.
Supported	Width	

Support Level	Feature Name	Description
Supported	X	
Supported	Y	

4.2.1.13 MonthCalendar

Table 4.40: Events

Support Level	Feature Name	Description
Supported	Clicked	
Supported	Constructor	
Supported	Destructor	
Supported	DoubleClicked	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Supported	GetFocus	
Unsupported	Help	
Supported	LoseFocus	
Unsupported	Other	
Supported	RButtonDown	See Common Features.

Table 4.41: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Supported	ClearBoldDates	
Supported	Drag	See Common Features.
Unsupported	GetContextService	
Supported	GetDateLimits	
Unsupported	GetDisplayRange	
Supported	GetParent	
Supported	GetSelectedDate	
Supported	GetSelectedRange	
Supported	GetToday	
Supported	Hide	
Supported	Move	
Supported	PointerX	

Support Level	Feature Name	Description
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	
Supported	Resize	
Supported	SetBoldDate	
Supported	SetDateLimits	
Supported	SetFocus	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	SetSelectedDate	
Supported	SetSelectedRange	
Supported	SetToday	
Supported	Show	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.42: Properties

Support Level	Feature Name	Description
Unsupported	Accelerator	
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported	AutoSize	
Unsupported	BackColor	See Common Features.
Supported	Border	
Supported	BorderStyle	See Common Features.
Supported	BringToTop	
Unsupported	ClassDefinition	
Supported	DragAuto	
Supported	DragIcon	
Supported	Enabled	
Supported	FaceName	See Common Features.
Supported	FirstDayOfWeek	
Supported	FontCharSet	See Common Features.
Supported	FontFamily	See Common Features.

Support Level	Feature Name	Description
Supported	FontPitch	See Common Features.
Supported	Height	
Supported	Italic	See Common Features.
Supported	MaxSelectCount	
Unsupported	MonthBackColor	
Supported on Web Only	Pointer	See Common Features.
Supported	RightToLeft	
Supported	ScrollRate	
Supported	TabOrder	See Common Features.
Supported	Tag	
Unsupported	TextColor	See Common Features.
Supported	TextSize	
Unsupported	TitleBackColor	
Unsupported	TitleTextColor	
Supported	TodayCircle	
Supported	TodaySection	Right-clicking the MonthCalendar control to select "Go to today" is not supported in the mobile application.
Partially Supported	TrailingTextColor	
Supported	Underline	See Common Features.
Supported	Visible	
Supported	WeekNumbers	
Supported	Weight	See Common Features.
Supported	Width	1. If the Width value is set to -32768, obtaining the width property returns -32768 on Appeon Mobile, however it returns 0 in PowerBuilder. 2. If the Width value is set to 32768, obtaining the width property returns 0 on Appeon Mobile, however it returns -32768 in PowerBuilder.
Supported	X	1. If the X value is set to -32768, obtaining the X property returns -32768 on Appeon Mobile, however it returns 0 in PowerBuilder.

Support Level	Feature Name	Description
		2. If the Width value is set to 32768, obtaining the width property returns 0 on Appeon Mobile, however it returns -32768 in PowerBuilder.
Supported	Y	1. If the Y value is set to -32768, obtaining the Y property returns -32768 on Appeon Mobile, however it returns 0 in PowerBuilder. 2. If the Width value is set to 32768, obtaining the width property returns 0 on Appeon Mobile, however it returns -32768 in PowerBuilder.

4.2.1.14 MultiLineEdit

Table 4.43: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Supported	GetFocus	
Unsupported	Help	
Supported	LoseFocus	
Supported	Modified	
Unsupported	Other	
Supported	RButtonDown	See Common Features.

Table 4.44: Functions

Support Level	Feature Name	Description
Unsupported	CanUndo	
Supported	ClassName	
Supported	Clear	The function executes successfully only when the control has focus.
Supported	Copy	
Supported	Cut	
Supported	Drag	See Common Features.
Unsupported	GetContextService	

Support Level	Feature Name	Description
Supported	GetParent	
Supported	Hide	
Supported on Web Only	LineCount	
Supported on Web Only	LineLength	
Supported	Move	
Supported	Paste	
Supported	PointerX	
Supported	PointerY	
Unsupported	Position	
Supported	PostEvent	
Unsupported	Print	
Supported	ReplaceText	
Supported	Resize	
Supported on Web Only	Scroll	
Supported	SelectedLength	
Supported on Web Only	SelectedLine	
Supported	SelectedStart	
Supported	SelectedText	
Supported	SelectText	See Common Features.
Supported	SetFocus	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	Show	
Supported on Web Only	TextLine	
Supported	TriggerEvent	
Supported	TypeOf	
Unsupported	Undo	

Table 4.45: Properties

Support Level	Feature Name	Description
Unsupported	Accelerator	
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported	Alignment	
Supported on Web Only	AutoHScroll	
Supported	AutoVScroll	
Supported	BackColor	See Common Features.
Supported	Border	
Supported	BorderStyle	See Common Features.
Supported	BringToTop	
Unsupported	ClassDefinition	
Supported	DisplayOnly	The DisplayOnly property in iOS and Android is different from that in PowerBuilder. In iOS and Android, DisplayOnly behaves like Disable, but it will not grey out like Disable. The Spin arrow will not take effect when clicked.
Supported	DragAuto	
Supported	DragIcon	
Supported	Enabled	
Supported	FaceName	See Common Features.
Supported	FontCharSet	See Common Features.
Supported	FontFamily	See Common Features.
Supported	FontPitch	See Common Features.
Supported	Height	
Supported on Web Only	HideSelection	
Supported	HScrollBar	See Common Features.
Unsupported	IgnoreDefaultButton	
Unsupported	ImeMode	
Supported	Italic	See Common Features.
Supported	Limit	

Support Level	Feature Name	Description
Supported on Web Only	Pointer	See Common Features.
Supported	RightToLeft	
Supported	TabOrder	See Common Features.
Unsupported	TabStop[]	
Supported	Tag	
Supported	Text	
Supported on Web Only	TextCase	The TextCase property is used to set the case of characters entered by the user. This property behaves slightly differently between PB and iOS. In PB as well as Android, the character changes its case as soon as it is typed. While in iOS, the character changes case after the text field loses focus.
Supported	TextColor	See Common Features.
Supported	TextSize	
Supported	Underline	See Common Features.
Supported	Visible	
Supported	VScrollBar	See Common Features.
Supported	Weight	See Common Features.
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.15 Oval

Table 4.46: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	

Table 4.47: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	

Support Level	Feature Name	Description
Supported	Move	
Supported	PostEvent	The PostEvent function returns 1 if it is successful.
Supported	Resize	
Supported	Show	
Supported	TriggerEvent	The TriggerEvent function returns 1 if it is successful.
Supported	TypeOf	

Table 4.48: Properties

Support Level	Feature Name	Description
Unsupported	ClassDefinition	
Supported	FillColor	
Supported	FillPattern	
Supported	Height	
Supported	LineColor	
Supported	LineStyle	
Supported	LineThickness	
Supported	Tag	
Supported	Visible	
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.16 Picture

Table 4.49: Events

Support Level	Feature Name	Description
Supported	Clicked	
Supported	Constructor	
Supported	Destructor	
Supported	DoubleClicked	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Supported	GetFocus	

Support Level	Feature Name	Description
Unsupported	Help	
Supported	LoseFocus	
Unsupported	Other	
Supported	RButtonDown	See Common Features.

Table 4.50: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Supported	Drag	See Common Features.
Unsupported	Draw	
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	Move	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	
Supported	Resize	
Supported	SetFocus	SetFocus(p_1) is unsupported.
Unsupported	SetPicture	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	Show	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.51: Properties

Support Level	Feature Name	Description
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported	Border	
Supported	BorderStyle	See Common Features.
Supported	BringToTop	

Support Level	Feature Name	Description
Unsupported	ClassDefinition	
Supported	DragAuto	
Supported	DragIcon	
Supported	Enabled	
Unsupported	FocusRectangle	
Supported	Height	
Unsupported	Invert	
Unsupported	Map3DColors	
Supported	OriginalSize	
Supported	PictureName	It is unsupported to dynamically change this property if the initial value is a GIF file. Different from PB, Appeon supports using an Internet URL as the value for PictureName, for example, p_1.picturename = "http://192.168.168.52/Appeon/AEM/images/AEM_TOP.jpg"
Supported on Web Only	Pointer	See Common Features.
Unsupported	PowerTipText	
Supported	TabOrder	See Common Features.
Supported	Tag	
Supported	Visible	
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.17 PictureButton

Table 4.52: Events

Support Level	Feature Name	Description
Supported	Clicked	
Supported	Constructor	
Supported	Destructor	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	

Support Level	Feature Name	Description
Supported	DragWithin	
Supported	GetFocus	
Unsupported	Help	
Supported	LoseFocus	
Unsupported	Other	
Supported	RButtonDown	See Common Features.

Table 4.53: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Supported	Drag	See Common Features.
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	Move	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	
Supported	Resize	
Supported	SetFocus	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	Show	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.54: Properties

Support Level	Feature Name	Description
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported	BackColor	See Common Features.
Supported	BringToTop	
Unsupported	Cancel	

Support Level	Feature Name	Description
Unsupported	ClassDefinition	
Unsupported	Default	
Supported	DisabledName	
Supported	DragAuto	
Supported	DragIcon	
Supported	Enabled	
Supported	FaceName	See Common Features.
Supported	FlatStyle	
Supported	FontCharSet	See Common Features.
Supported	FontFamily	See Common Features.
Supported	FontPitch	See Common Features.
Supported	Height	
Supported	HTextAlign	
Supported	Italic	See Common Features.
Unsupported	Map3DColors	
Supported	OriginalSize	
Supported	PictureName	Different from PB, Appeon supports using an Internet URL as the value for PictureName, for example, pb_1.picturename = "http://192.168.168.52/Appeon/AEM/images/AEM_TOP.jpg"
Supported	Pointer	See Common Features.
Unsupported	PowerTipText	
Supported	TabOrder	See Common Features.
Supported	Tag	
Supported	Text	
Partially Supported	TextColor	See Common Features.
Supported	TextSize	
Supported	Underline	See Common Features.
Supported	Visible	
Supported	VTextAlign	
Supported	Weight	See Common Features.
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.18 PicturehyperLink

Table 4.55: Events

Support Level	Feature Name	Description
Supported	Clicked	
Supported	Constructor	
Supported	Destructor	
Supported	DoubleClicked	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Supported	GetFocus	
Unsupported	Help	
Supported	LoseFocus	
Unsupported	Other	
Supported	RButtonDown	See Common Features.

Table 4.56: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Supported	Drag	See Common Features.
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	Move	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	
Supported	Resize	
Supported	SetFocus	
Unsupported	SetPicture	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	Show	
Supported	TriggerEvent	

Support Level	Feature Name	Description
Supported	TypeOf	

Table 4.57: Properties

Support Level	Feature Name	Description
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported	Border	
Supported	BorderStyle	See Common Features.
Supported	BringToTop	
Unsupported	ClassDefinition	
Supported	DragAuto	
Supported	DragIcon	
Supported	Enabled	
Unsupported	FocusRectangle	
Supported	Height	
Unsupported	Invert	
Unsupported	Map3DColors	
Supported	OriginalSize	
Supported	PictureName	Different from PB, Appeon supports using an Internet URL as the value for PictureName, for example, phl_1.picturename = "http://192.168.168.52/Appeon/AEM/images/AEM_TOP.jpg" In order for Android to recognize the URL, the URL must always start with "http://" or "https://", for example, "http://www.google.com", while iOS can recognize URLs without "http://" or "https://", for example, "www.google.com".
Supported on Web Only	Pointer	See Common Features.
Unsupported	PowerTipText	
Supported	TabOrder	See Common Features.
Supported	Tag	
Supported	URL	
Supported	Visible	

Support Level	Feature Name	Description
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.19 PictureListBox

Table 4.58: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	
Supported	DoubleClicked	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Supported	GetFocus	
Unsupported	Help	
Supported	LoseFocus	
Unsupported	Other	
Supported	RButtonDown	See Common Features.
Supported	SelectionChanged	

Table 4.59: Functions

Support Level	Feature Name	Description
Supported	AddItem	
Supported	AddPicture	
Supported	ClassName	
Supported	DeleteItem	
Supported	DeletePicture	
Supported	DeletePictures	
Unsupported	DirList	
Unsupported	DirSelect	
Supported	Drag	See Common Features.
Supported	FindItem	
Unsupported	GetContextService	
Supported	GetParent	

Support Level	Feature Name	Description
Supported	Hide	
Supported	InsertItem	
Supported	Move	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	
Supported	Resize	
Supported	SelectedIndex	
Supported	SelectedItem	
Supported	SelectItem	
Supported	SetFocus	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	SetState	
Supported	SetTop	
Supported	Show	
Supported	State	
Supported	Text	
Supported	Top	
Supported	TotalItems	
Supported	TotalSelected	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.60: Properties

Support Level	Feature Name	Description
Unsupported	Accelerator	
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported	AutoHScroll	
Supported	BackColor	See Common Features.
Supported	Border	
Supported	BorderStyle	See Common Features.

Support Level	Feature Name	Description
Supported	BringToTop	
Unsupported	ClassDefinition	
Unsupported	DisableNoScroll	
Supported	DragAuto	
Supported	DragIcon	
Supported	Enabled	
Unsupported	ExtendedSelect	
Supported	FaceName	See Common Features.
Supported	FontCharSet	See Common Features.
Supported	FontFamily	See Common Features.
Supported	FontPitch	See Common Features.
Supported	Height	
Supported	HScrollBar	See Common Features.
Supported	Italic	See Common Features.
Supported	Item[ ]	
Supported	ItemPictureIndex	
Supported	ItemPictureIndex[ ]	
Supported	MultiSelect	
Supported	PictureHeight	
Unsupported	PictureMaskColor	
Supported	PictureName[ ]	
Supported	PictureWidth	
Supported on Web Only	Pointer	See Common Features.
Supported	RightToLeft	
Supported	Sorted	
Supported	TabOrder	See Common Features.
Unsupported	TabStop[]	
Supported	Tag	
Supported	TextColor	See Common Features.
Supported	TextSize	
Supported	Underline	See Common Features.
Supported	Visible	
Supported	VScrollBar	See Common Features.

Support Level	Feature Name	Description
Supported	Weight	See Common Features.
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.20 RadioButton

Table 4.61: Events

Support Level	Feature Name	Description
Supported	Clicked	
Supported	Constructor	
Supported	Destructor	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Supported	GetFocus	
Unsupported	Help	
Supported	LoseFocus	
Unsupported	Other	
Supported	RButtonDown	See Common Features.
Supported	WM_LBUTTONDOWN	
Supported	WM_LBUTTONUP	
Supported	WM_MOUSEMOVE	

Table 4.62: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Supported	Drag	See Common Features.
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	Move	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	

Support Level	Feature Name	Description
Unsupported	Print	
Supported	Resize	
Supported	SetFocus	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	Show	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.63: Properties

Support Level	Feature Name	Description
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported	Automatic	
Supported	BackColor	See Common Features.
Supported	BorderStyle	See Common Features.
Supported	BringToTop	
Supported	Checked	
Unsupported	ClassDefinition	
Supported	DragAuto	
Supported	DragIcon	
Supported	Enabled	
Supported	FaceName	See Common Features.
Supported	FontCharSet	See Common Features.
Supported	FontFamily	See Common Features.
Supported	FontPitch	See Common Features.
Supported	Height	
Supported	Italic	See Common Features.
Supported	LeftText	
Supported on Web Only	Pointer	See Common Features.
Supported	RightToLeft	
Supported	TabOrder	See Common Features.

Support Level	Feature Name	Description
Supported	Tag	
Supported	Text	
Supported	TextColor	See Common Features.
Supported	TextSize	
Supported	TextSize	
Supported	Underline	
Supported	Visible	
Supported	Weight	See Common Features.
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.21 Rectangle

Table 4.64: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	

Table 4.65: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	Move	
Supported	PostEvent	The PostEvent function returns 1 if it is successful.
Supported	Resize	
Supported	Show	
Supported	TriggerEvent	The TriggerEvent function returns 1 if it is successful.
Supported	TypeOf	

Table 4.66: Properties

Support Level	Feature Name	Description
Unsupported	ClassDefinition	

Support Level	Feature Name	Description
Supported	FillColor	
Supported	FillPattern	
Supported	Height	
Supported	LineColor	
Supported	LineStyle	
Supported	LineThickness	
Supported	Tag	
Supported	Visible	
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.22 RoundRectangle

Table 4.67: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	

Table 4.68: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	Move	
Supported	Resize	
Supported	Show	
Supported	TypeOf	

Table 4.69: Properties

Support Level	Feature Name	Description
Unsupported	ClassDefinition	
Supported	CornerHeight	
Supported	CornerWidth	
Supported	FillColor	

Support Level	Feature Name	Description
Supported	FillPattern	
Supported	Height	
Supported	LineColor	
Supported	LineStyle	
Supported	LineThickness	
Supported	Tag	
Supported	Visible	
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.23 SingleLineEdit

Table 4.70: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Supported	GetFocus	
Unsupported	Help	
Supported	LoseFocus	
Supported	Modified	
Unsupported	Other	
Supported	RButtonDown	See Common Features.

Table 4.71: Functions

Support Level	Feature Name	Description
Unsupported	CanUndo	
Supported	ClassName	
Supported	Clear	
Supported	Copy	
Supported	Cut	
Supported	Drag	See Common Features.

Support Level	Feature Name	Description
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	Move	
Supported	Paste	
Supported	PointerX	
Supported	PointerY	
Supported	Position	
Supported	PostEvent	
Unsupported	Print	
Supported	ReplaceText	
Supported	Resize	
Supported	SelectedLength	If the control is off screen, this function may return an incorrect value.
Supported	SelectedStart	If the control is off screen, this function may return an incorrect value.
Supported	SelectedText	If the control is off screen, this function may return an incorrect value.
Supported	SelectText	See Common Features.
Supported	SetFocus	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	Show	
Supported	TriggerEvent	
Supported	TypeOf	
Unsupported	Undo	

Table 4.72: Properties

Support Level	Feature Name	Description
Unsupported	Accelerator	
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported on Web Only	AutoHScroll	

Support Level	Feature Name	Description
Supported	BackColor	See Common Features.
Supported	Border	
Supported	BorderStyle	See Common Features.
Supported	BringToTop	
Unsupported	ClassDefinition	
Supported	DisplayOnly	The DisplayOnly property in iOS and Android is different from that in PowerBuilder. In iOS and Android, DisplayOnly behaves like Disable, but it will not grey out like Disable. The Spin arrow will not take effect when clicked.
Supported	DragAuto	
Supported	DragIcon	
Supported	Enabled	
Supported	FaceName	See Common Features.
Supported	FontCharSet	See Common Features.
Supported	FontFamily	See Common Features.
Supported	FontPitch	See Common Features.
Supported	Height	
Supported on Web Only	HideSelection	
Supported on Web Only	ImeMode	
Supported	Italic	See Common Features.
Supported	Limit	
Supported	Password	The Password field will automatically take the mobile behaviour, for example, 1) When entering a password, the character will first display for 1 second and then turn into the asterisk character "*"; 2) If you moved focus away from the control and then moved back again to edit the content, the original content will be cleared.
Supported on Web Only	Pointer	See Common Features.
Supported	RightToLeft	As the operating system does not support right-to-left display, currently text is aligned to right.
Supported	TabOrder	See Common Features.

Support Level	Feature Name	Description
Supported	Tag	
Supported	Text	
Supported	TextCase	The TextCase property is used to set the case of characters entered by the user. This property behaves slightly differently between PB and iOS. In PB as well as Android, the character changes its case as soon as it is typed. While in iOS, the character changes case after the text field loses focus.
Supported	TextColor	See Common Features.
Supported	TextSize	
Supported	Underline	See Common Features.
Supported	Visible	
Supported	Weight	See Common Features.
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.24 StaticHyperLink

Table 4.73: Events

Support Level	Feature Name	Description
Supported	Clicked	
Supported	Constructor	
Supported	Destructor	
Supported	DoubleClicked	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Supported	GetFocus	
Unsupported	Help	
Supported	LoseFocus	
Unsupported	Other	
Supported	RButtonDown	See Common Features.

Table 4.74: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Supported	Drag	See Common Features.
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	Move	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	
Supported	Resize	
Supported	SetFocus	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	Show	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.75: Properties

Support Level	Feature Name	Description
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported	Alignment	
Supported	BackColor	See Common Features.
Supported	Border	
Supported	BorderStyle	See Common Features.
Supported	BringToTop	
Unsupported	ClassDefinition	
Supported	DisabledLook	
Supported	DragAuto	
Supported	DragIcon	
Supported	Enabled	
Supported	FaceName	See Common Features.

Support Level	Feature Name	Description
Supported	FillPattern	
Unsupported	FocusRectangle	
Supported	FontCharSet	See Common Features.
Supported	FontFamily	See Common Features.
Supported	FontPitch	See Common Features.
Supported	Height	
Supported	Italic	See Common Features.
Supported on Web Only	Pointer	See Common Features.
Supported	RightToLeft	
Supported	TabOrder	See Common Features.
Supported	Tag	
Supported	Text	
Supported	TextColor	See Common Features.
Supported	TextSize	
Supported	Underline	See Common Features.
Supported	URL	In order for Android to recognize the URL, the URL must always start with "http://" or "https://", for example, "http://www.google.com", while iOS can recognize URLs without "http://" or "https://", for example, "www.google.com".
Supported	Visible	
Supported	Weight	See Common Features.
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.25 StaticText

Table 4.76: Events

Support Level	Feature Name	Description
Supported	Clicked	
Supported	Constructor	
Supported	DoubleClicked	
Supported	DragDrop	
Supported	DragEnter	

Support Level	Feature Name	Description
Supported	DragLeave	
Supported	DragWithin	
Supported	GetFocus	
Unsupported	Help	
Supported	LoseFocus	
Unsupported	Other	
Supported	RButtonDown	See Common Features.

Table 4.77: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Supported	Drag	See Common Features.
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	Move	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	
Supported	Resize	
Supported	SetFocus	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	Show	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.78: Properties

Support Level	Feature Name	Description
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported	Alignment	
Supported	BackColor	See Common Features.

Support Level	Feature Name	Description
Supported	Border	
Partially Supported	BorderColor	Refer to BackColor.
Supported	BorderStyle	See Common Features.
Supported	BringToTop	
Unsupported	ClassDefinition	
Supported	DisabledLook	
Supported	DragAuto	
Supported	DragIcon	
Supported	Enabled	
Supported	FaceName	See Common Features.
Supported	FillPattern	
Unsupported	FocusRectangle	
Supported	FontCharSet	See Common Features.
Supported	FontFamily	See Common Features.
Supported	FontPitch	See Common Features.
Supported	Height	
Supported	Italic	See Common Features.
Supported on Web Only	Pointer	See Common Features.
Supported	RightToLeft	
Supported	TabOrder	See Common Features.
Supported	Tag	
Supported	Text	
Supported	TextColor	See Common Features.
Supported	TextSize	
Supported	Underline	See Common Features.
Supported	Visible	
Supported	Weight	See Common Features.
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.26 Tab

Table 4.79: Events

Support Level	Feature Name	Description
Supported	Clicked	
Supported	Constructor	
Supported	Destructor	
Supported	DoubleClicked	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Supported	GetFocus	
Unsupported	Help	
Supported on Web Only	Key	
Supported	LoseFocus	
Unsupported	Other	
Supported	RightClicked	
Supported	RightDoubleClicked	
Supported	SelectionChanged	
Supported	SelectionChanging	

Table 4.80: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Supported	CloseTab	
Supported	Drag	See Common Features.
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	Move	
Supported	MoveTab	
Supported	OpenTab	The *userobjectvar* argument cannot be the control array of tab control, for example, tab_1.control[1] is unsupported, while tab_1.tabpage_1 is supported.

Support Level	Feature Name	Description
		The X and Y properties of the user object which is opened as a tab page will return 0 in the mobile application.
Supported	OpenTabWithParm	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	
Supported	Resize	
Supported	SetFocus	
Supported	SelectTab	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	Show	
Supported	TabPostEvent	
Supported	TabTriggerEvent	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.81: Properties

Support Level	Feature Name	Description
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported	Alignment	
Supported	BackColor	See Common Features.
Supported	BoldSelectedText	
Supported	BringToTop	
Unsupported	ClassDefinition	
Supported	Control[]	
Supported	CreateOnDemand	
Supported	DragAuto	
Supported	DragIcon	
Supported	Enabled	
Supported	FaceName	See Common Features.

Support Level	Feature Name	Description
Supported	FixedWidth	
Supported	FocusOnButtonDown	
Supported	FontCharSet	See Common Features.
Supported	FontFamily	See Common Features.
Supported	FontPitch	See Common Features.
Supported	Height	
Supported	Italic	See Common Features.
Unsupported	Multiline	
Unsupported	PerpendicularText	
Supported	PictureOnRight	
Supported on Web Only	Pointer	See Common Features.
Unsupported	PowerTips	
Supported	RaggedRight	
Supported	SelectedTab	
Supported	ShowPicture	
Supported	ShowText	
Supported	TabOrder	See Common Features.
Partially Supported	TabPosition	Supported values of the TabPosition property: TabsOnBottom!, TabsOnTop! Unsupported values of the TabPosition property: TabsOnBottomAndTop!, TabsOnLeftAndRight!, TabsOnRightAndLeft!, TabsOnTopAndBottom!, TabsOnLeft!, TabsOnRight!
Supported	Tag	
Supported	TextSize	
Supported	Underline	See Common Features.
Supported	Visible	
Supported	Weight	See Common Features.
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.27 TreeView

Table 4.82: Events

Support Level	Feature Name	Description
Supported	BeginDrag	
Supported	BeginLabelEdit	
Supported	BeginRightDrag	
Supported	Clicked	
Supported	Constructor	
Supported	DeleteItem	
Supported	Destructor	
Supported	DoubleClicked	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Supported	EndLabelEdit	
Supported	GetFocus	
Unsupported	Help	
Supported	ItemCollapsed	
Supported	ItemCollapsing	
Supported	ItemExpanded	
Supported	ItemExpanding	
Supported	ItemPopulate	
Supported on Web Only	Key	
Supported	LoseFocus	
Unsupported	Other	
Supported	RightClicked	
Supported	RightDoubleClicked	
Supported	SelectionChanged	
Supported	SelectionChanging	
Unsupported	Sort	

Table 4.83: Functions

Support Level	Feature Name	Description
Supported	AddPicture	

Support Level	Feature Name	Description
Supported	AddStatePicture	
Supported	ClassName	
Supported	CollapseItem	
Supported	DeleteItem	
Supported	DeletePicture	
Supported	DeletePictures	
Supported	DeleteStatePicture	
Supported	DeleteStatePictures	
Supported	Drag	See Common Features.
Supported	EditLabel	
Supported	ExpandAll	
Supported	ExpandItem	
Supported	FindItem	The *navigationcode* argument cannot be the following values: DropHighlightTreeItem!, and FirstVisibleTreeItem!
Unsupported	GetContextService	
Supported	GetItem	
Supported	GetItemAtPointer	
Supported	GetParent	
Supported	Hide	
Supported	InsertItem	
Supported	InsertItemFirst	
Supported	InsertItemLast	
Supported	InsertItemSort	
Supported	Move	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	
Supported	Resize	
Supported	SelectItem	
Unsupported	SetDropHighlight	
Supported	SetFirstVisible	
Supported	SetFocus	
Supported	SetItem	

Support Level	Feature Name	Description
Supported	SetLevelPictures	
Supported	SetOverlayPictures	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	Show	
Supported	Sort	
Supported	SortAll	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.84: Properties

Support Level	Feature Name	Description
Unsupported	Accelerator	
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported	BackColor	See Common Features.
Supported	Border	
Supported	BorderStyle	See Common Features.
Supported	BringToTop	
Supported	CheckBoxes	
Supported	Children	
Unsupported	ClassDefinition	
Supported	CutHighLight	
Supported	Data	
Unsupported	DeleteItems	
Unsupported	DisableDragAndDrop	
Supported	DragAuto	
Supported	DragIcon	
Supported	DropHighLight	
Supported	EditLabels	
Supported	Enabled	
Supported	Expanded	
Supported	ExpandedOnce	
Supported	FaceName	See Common Features.

Support Level	Feature Name	Description
Supported	FontCharSet	See Common Features.
Supported	FontFamily	See Common Features.
Supported	FontPitch	See Common Features.
Supported	FullRowSelect	
Supported	HasButtons	
Supported	HasFocus	
Supported	HasLines	
Supported	HideSelection	
Supported	Hight	
Supported	ImeMode	
Supported	Indent	
Supported	Italic	See Common Features.
Supported	ItemHandle	
Supported	Label	
Supported	LayoutRTL	
Supported	Level	
Supported	LinesAtRoot	
Supported	OverlayPictureIndex	
Supported	PictureHeight	
Supported	PictureIndex	
Supported	PictureMaskColor	
Supported	PictureName[]	Assigning values to part of an array and using the default values for the remaining part is not supported.
Supported on Web Only	Pointer	See Common Features.
Supported	RightToLeft	
Supported	Selected	
Supported	SelectedPictureIndex	
Supported	SingleExpand	
Unsupported	SortType	
Supported	StatePictureHeight	
Supported	StatePictureIndex	
Supported	StatePictureMaskColor	

Support Level	Feature Name	Description
Supported	StatePictureName[]	Assigning values to part of an array and using the default values for the remaining part is not supported.
Supported	StatePictureWidth	
Supported	TabOrder	See Common Features.
Supported	Tag	
Supported	TextColor	See Common Features.
Supported	TextSize	
Supported	ToolTips	
Supported	TrackSelect	
Supported	Transparency	
Supported	Underline	See Common Features.
Supported	Visible	
Supported	Weight	See Common Features.
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.28 VProgressBar

Table 4.85: Events

Support Level	Feature Name	Description
Supported	Clicked	
Supported	Constructor	
Supported	Destructor	
Supported	DoubleClicked	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Supported	GetFocus	
Unsupported	Help	
Supported	LoseFocus	
Unsupported	Other	
Supported	RButtonDown	See Common Features.

Table 4.86: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Supported	Drag	See Common Features.
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	Move	
Supported	OffsetPos	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	
Supported	Resize	
Supported	SetFocus	
Supported	SetPosition	
Supported	SetRange	
Supported	SetRedraw	See Common Features.
Supported	Show	
Supported	Steplt	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.87: Properties

Support Level	Feature Name	Description
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported	BringToTop	
Unsupported	ClassDefinition	
Supported	DragAuto	
Supported	DragIcon	
Supported	Height	
Supported	MaxPosition	
Supported	MinPosition	

Support Level	Feature Name	Description
Supported on Web Only	Pointer	See Common Features.
Supported	Position	
Supported	SetStep	
Unsupported	SmoothScroll	
Supported	TabOrder	See Common Features.
Supported	Tag	
Supported	Visible	
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.29 VTrackBar

Table 4.88: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Supported	GetFocus	
Unsupported	Help	
Supported	LineDown	
Supported	LineUp	
Supported	LoseFocus	
Supported	Moved	
Unsupported	Other	
Supported	PageDown	
Supported	PageUp	
Supported	RButtonDown	See Common Features.

Table 4.89: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Supported	Drag	See Common Features.
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	Move	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	
Supported	Resize	
Supported	SelectionRange	
Supported	SetFocus	
Supported	SetPosition	
Supported	SetRedraw	See Common Features.
Supported	Show	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.90: Properties

Support Level	Feature Name	Description
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported	BringToTop	
Unsupported	ClassDefinition	
Supported	DragAuto	
Supported	DragIcon	
Supported	Height	
Supported	LineSize	
Supported	MaxPosition	
Supported	MinPosition	
Supported	PageSize	

Support Level	Feature Name	Description
Supported on Web Only	Pointer	See Common Features.
Supported	Slider	
Supported	SliderSize	
Supported	TabOrder	See Common Features.
Supported	Tag	
Supported	TickFrequency	
Supported	TickMarks	
Supported	Visible	
Supported	Width	
Supported	X	
Supported	Y	

4.2.1.30 Window

Table 4.91: Events

Support Level	Feature Name	Description
Supported	Activate	
Supported	Clicked	
Supported	Close	The event triggering order of window's close event: 1. To close the window which is opened by Open: Main Window: Closequery, Close, (Parent window Active event) Child Window: Closequery, Close, Hide MDI/MDIhelp Window: Closequery, Close, (Parent window Active event) Popup Window: Closequery, Close, (Parent window Active event) Response Window: Closequery, Close, (Parent window Active event) 2. To close the Sheet window which is opened by Opensheet: Main Window: Closequery, Close, Deactive, (Parent window Active event), Hide

Support Level	Feature Name	Description
		Child Window: Closequery, Close, Deactive, (Parent window Active event), Hide MDI/MDIhelp Window: cannot be opened by Sheet Popup Window: Closequery, Close, Deactive, (Parent window Active event), Hide Response Window: Closequery, Close, Deactive, (Parent window Active event), Hide
Supported	CloseQuery	
Supported	Deactivate	
Supported	DoubleClicked	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Unsupported	Help	
Supported	Hide	
Unsupported	HotLinkAlarm	
Supported on Web Only	Key	
Supported	MouseDown	
Supported	MouseMove	Because of platform difference, MouseMove has the following difference when it is registered for a control: 1) When the finger touches down and moves, MouseMove event is triggered, when the finger lifts up, execution of MouseMove is terminated. 2) The MouseMove event is only triggered for the control that it is registered for. 3) When MouseMove event is triggered, the Flag parameter is set with values according to the current Assistive Touch Bar mode (Left-Click or Right-Click). 4) The value of xpos and ypos parameters is relative to the coordinates of the control, not to the global coordinates of the screen.

Support Level	Feature Name	Description
		5) When the finger moves out of the control, execution of MouseMove is terminated. 6) MouseMove event will not be triggered, when the current Assistive Touch Bar mode is Drag. 7) MouseMove event is unsupported for the DataWindow control.
Supported	MouseUp	
Supported	Open	
Unsupported	Other	
Supported	RButtonDown	See Common Features.
Unsupported	RemoteExec	
Unsupported	RemoteHotLinkStart	
Unsupported	RemoteHotLinkStop	
Unsupported	RemoteRequest	
Supported	Resize	
Supported	Show	
Supported	SystemKey	
Supported	Timer	In Android and iOS, MessageBox will block the execution of the Timer event.
Unsupported	ToolbarMoved	

Table 4.92: Functions

Support Level	Feature Name	Description
Unsupported	ArrangeSheets	
Supported	ChangeMenu	
Supported	ClassName	
Unsupported	CloseChannel	
Supported	CloseUserObject	
Unsupported	ExecRemote	
Supported	GetActiveSheet	
Unsupported	GetCommandDDE	
Unsupported	GetCommandDDEOrigin	
Unsupported	GetContextService	
Unsupported	GetDataDDE	
Unsupported	GetDataDDEOrigin	
Supported	GetFirstSheet	

Support Level	Feature Name	Description
Supported	GetNextSheet	
Supported	GetParent	
Unsupported	GetRemote	
Unsupported	GetToolbar	
Unsupported	GetToolbarPos	
Supported	Hide	
Supported	Move	
Unsupported	OpenChannel	
Supported	OpenUserObject	
Supported	OpenUserObjectWithParm	
Supported	ParentWindow	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	
Supported	Resize	
Unsupported	RespondRemote	
Unsupported	SetDataDDE	
Supported	SetFocus	
Supported	SetMicroHelp	

Supported	SetPosition	**Mobile platform difference:**
		In Android, if the Visible property is set to False, then SetPosition (TopMost!) will have no effect. For example,
		`w_1.visible = false`
		`w_1.setPosition(TopMost!)`
		`w_1.visible = true`
		The w_1 window becomes visible, but still does not display on top of all other open windows.

Supported	SetRedraw	See Common Features.
Unsupported	SetRemote	
Unsupported	SetToolbar	
Unsupported	SetToolbarPos	
Supported	Show	
Unsupported	StartHotLink	
Unsupported	StartServerDDE	

Support Level	Feature Name	Description
Unsupported	StopHotLink	
Unsupported	StopServerDDE	
Supported	TriggerEvent	
Supported	TypeOf	
Supported	WorkspaceHeight	
Supported	WorkspaceWidth	
Supported	WorkspaceX	
Supported	WorkspaceY	

Table 4.93: Properties

Support Level	Feature Name	Description
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Unsupported	AnimationTime	
Supported	BackColor	See Common Features.
Supported	Border	
Supported	BringToTop	
Supported	Center	
Unsupported	ClassDefinition	
Unsupported	ClientEdge	
Unsupported	CloseAnimation	
Unsupported	ColumnsPerPage	
Unsupported	ContextHelp	
Supported	Control[]	
Supported	ControlMenu	In the mobile application, the Control Menu box, the Maximize box, and the Minimize box will be displayed in a dropdown menu on the right of the title bar.
Supported	Enabled	
Supported	Height	
Supported	HScrollBar	See Common Features.
Unsupported	Icon	
Unsupported	LinesPerPage	
Supported	MaxBox	Refer to the ControlMenu property.

Support Level	Feature Name	Description
Supported	MenuID	
Supported	MenuName	
Supported	MinBox	Refer to the ControlMenu property.
Unsupported	OpenAnimation	
Unsupported	PaletteWindow	
Supported on Web Only	Pointer	See Common Features.
Supported	Resizable	
Supported	RightToLeft	
Supported	Tag	
Supported	Title	
Supported	TitleBar	
Unsupported	ToolbarAlignment	
Unsupported	ToolbarHeight	
Supported	ToolbarVisible	
Unsupported	ToolbarWidth	
Unsupported	ToolbarX	
Unsupported	ToolbarY	
Unsupported	Transparency	
Unsupported	UnitsPerColumn	
Unsupported	UnitsPerLine	
Supported	Visible	
Supported	VScrollBar	See Common Features.
Supported	Width	
Supported	WindowState	
Supported	WindowType	
Supported	X	
Supported	Y	

4.2.2 Unsupported controls

The following are the controls that Appeon Mobile does not support:

- Animation
- HScrollBar
- InkEdit

- InkPicture
- OLEControl
- OLECustomControl
- RichTextEdit
- VScrollBar

4.3 Objects

- There can only be one Application object in an application.
- DragObject, GraphicObject, PowerObject and WindowObject cannot be dynamically created (for example, by using the CREATE statement); they must be defined as static objects, created in PowerBuilder painter.
- It is strongly recommended that for a given application, no objects have the same name.
- The following are the system objects that Appeon Mobile supports:

Application	Connection	CORBAObject	DynamicDescriptionArea
DynamicStagingArea	Environment	Graph	grAxis
grDispAttr	Inet	InternetResult	JaguarORB
ListViewItem	MDIClient	Menu	MenuCascade
Message	MLSync	SyncParm	Timing
Transaction	TreeViewItem	UserObject	WSConnection

- The following are the system objects that Appeon Mobile does not support:

ADOResultSet	ArrayBounds	ClassDefinition	ContextInformation
ContextKeyword	CORBACurrent	Enumeration Definition	EnumerationItem Definition
Error	ErrorLogging	Exception	MailFileDescription
MailMessage	MailRecipient	MailSession	MLSynchronization
OLEObject	OLEStorage	OLEStream	OLETxnObject
Pipeline	ProfileCall	ProfileClass	ProfileLine
Profiling	ProfileRoutine	ResultSet	ResultSets
RuntimeError	ScriptDefinition	SimpleTypeDefinition	SSLCallBack
SSLServiceProvider	Throwable	TraceActivityNode	TraceBeginEnd
TraceError	TraceESQL	TraceFile	TraceGarbageCollect
TraceLine	TraceObject	TraceRoutine	TraceTree
TraceTreeError	TraceTreeESQL	TraceTreeGarbage Collect	TraceTreeLine

TraceTreeNode	TraceTreeObject	TraceTreeRoutine	TraceTreeUser
TransactionServer	TraceUser	TypeDefinition	ULSync
VariableCardinality Definition	VariableDefinition		

4.3.1 Supported Objects

4.3.1.1 Application

Table 4.94: Events

Support Level	Feature Name	Description
Supported	Close	
Unsupported	Idle	This event is supported in iOS, but unsupported in Android.
Supported	Open	
Unsupported	SystemError	
Supported	appeon_android_back	This event is defined by Appeon Mobile and will be triggered when the Back button on the Android device is pressed. When you add this event, keep Event ID default to None. If you set Event ID to other value than None, this event will not be triggered.

Table 4.95: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Unsupported	GetContextService	
Supported	GetParent	
Supported	PostEvent	
Unsupported	SetLibraryList	
Unsupported	SetTransPool	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.96: Properties

Support Level	Feature Name	Description
Supported	AppName	
Unsupported	ClassDefinition	

Support Level	Feature Name	Description
Unsupported	DDETimeOut	
Supported	DisplayName	
Unsupported	DWMessageTitle	
Unsupported	FreeDBLibraries	
Supported	MicroHelpDefault	
Supported	RightToLeft	
Supported	ToolbarFrameTitle	
Unsupported	ToolbarPopMenuText	
Supported	ToolbarSheetTitle	
Supported	ToolbarText	
Supported	ToolbarTips	
Unsupported	ToolbarUserControl	

4.3.1.2 Connection

Table 4.97: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	
Unsupported	Error	

Table 4.98: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Supported	ConnectToServer	
Supported	CreateInstance	
Supported	DisconnectServer	
Unsupported	GetContextService	
Supported	GetParent	
Unsupported	GetServerInfo	
Unsupported	Lookup	
Supported	PostEvent	
Unsupported	RemoteStopListening	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.99: Options

Support Level	Feature Name	Description
Supported	ORBcacheSize	
Supported	ORBcertificateLabel	
Supported	ORBCodeSet	
Supported	ORBentrustIniFile	
Supported	ORBentrustPassword	
Supported	ORBentrustUserProfile	
Supported	ORBHttp	
Supported	ORBHttpExtraHeader	
Supported	ORBIdleConnection Timeout	
Supported	ORBLogFile	
Supported	ORBLogllOP	
Supported	ORBpin	
Supported	ORBProxyHost	
Supported	ORBProxyPort	
Supported	ORBqop	
Supported	ORBRetryCount	
Supported	ORBRetryDelay	
Supported	ORBsocketReuseLimit	
Supported	ORBuseEntrustID	
Supported	ORBuserdata	
Supported	ORBWebProxyHost	

Table 4.100: Properties

Support Level	Feature Name	Description
Supported	Application	
Unsupported	ClassDefinition	
Unsupported	ConnectString	
Supported	Driver	
Supported	ErrCode	
Supported	ErrText	
Unsupported	Handle	
Supported	Location	
Unsupported	Options	

Support Level	Feature Name	Description
Supported	Password	
Unsupported	Trace	
Supported	UserID	

4.3.1.3 CORBAObject

Table 4.101: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	

Table 4.102: Functions

Support Level	Feature Name	Description
Unsupported	_Is_A	
Unsupported	_Narrow	
Supported	ClassName	
Unsupported	GetContextService	
Supported	GetParent	
Supported	PostEvent	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.103: Properties

Support Level	Feature Name	Description
Unsupported	ClassDefinition	

4.3.1.4 DynamicDescriptionArea

Table 4.104: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	

Table 4.105: Functions

Support Level	Feature Name	Description
Supported	ClassName	

Support Level	Feature Name	Description
Unsupported	GetContextService	
Supported	GetDynamicDate	
Supported	GetDynamicDateTime	
Supported	GetDynamicDecimal	
Supported	GetDynamicNumber	
Supported	GetDynamicParm	
Supported	GetDynamicString	
Supported	GetDynamicTime	
Supported	GetParent	
Supported	PostEvent	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.106: Properties

Support Level	Feature Name	Description
Unsupported	ClassDefinition	
Supported	InParmType[]	
Supported	NumInputs	
Supported	NumOutputs	
Supported	OutParmType[]	

4.3.1.5 DynamicStagingArea

Table 4.107: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	

Table 4.108: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Unsupported	GetContextService	
Supported	GetParent	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.109: Properties

Support Level	Feature Name	Description
Unsupported	ClassDefinition	

4.3.1.6 Environment

Table 4.110: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Unsupported	GetContextService	
Unsupported	GetParent	
Supported	TypeOf	

Table 4.111: Properties

Support Level	Feature Name	Description
Supported	CharSet	
Unsupported	ClassDefinition	
Unsupported	CPUType	In iOS and Android, the default value is i286.
Unsupported	Language	In iOS and Android, the default value is languagemal tese.
Unsupported	MachineCode	In iOS and Android, the default value is False.
Unsupported	NumberOfColors	In iOS and Android, the default value is 0.
Unsupported	OSFixesRevison	In iOS and Android, the default value is 0.
Unsupported	OSMajorRevision	In iOS and Android, the default value is 6.
Unsupported	OSMinorRevision	In iOS and Android, the default value is 1.
Unsupported	OSType	In iOS and Android, the default value is windowsnt!.
Unsupported	PBBuildNumber	In iOS and Android, the default value is 1.
Unsupported	PBFixesRevision	In iOS and Android, the default value is 4.
Unsupported	PBMajorRevision	In iOS and Android, the default value is 8.
Unsupported	PBMinorRevision	In iOS and Android, the default value is 0.
Unsupported	PBType	In iOS and Android, the default value is enterprise!.
Supported	ScreenHeight	In iOS and Android, it gets the height of the mobile screen in points.
Supported	ScreenWidth	In iOS and Android, it gets the width of the mobile screen in points.
Unsupported	Win16(obsolete)	In iOS and Android, the default value is False.

4.3.1.7 Graph

Table 4.112: Events

Support Level	Feature Name	Description
Supported	Clicked	
Supported	Constructor	
Supported	Destructor	
Supported	DoubleClicked	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Supported	GetFocus	
Unsupported	Help	
Supported	LoseFocus	
Unsupported	Other	
Supported	RButtonDown	

Table 4.113: Functions

Support Level	Feature Name	Description
Supported	AddCategory	
Supported	AddData	
Supported	AddSeries	
Supported	CategoryCount	
Supported	CategoryName	
Supported	ClassName	
Unsupported	Clipboard	
Supported	DataCount	
Supported	DeleteCategory	
Supported	DeleteSeries	
Supported	Drag	
Supported	FindCategory	
Supported	FindSeries	
Unsupported	GetContextService	
Supported	GetData	
Unsupported	GetDataLabelling	
Supported	GetDataPieExplode	

Support Level	Feature Name	Description
Supported	GetDataStyle	
Unsupported	GetDataTransparency	
Supported	GetDataValue	
Supported	GetParent	
Unsupported	GetSeriesLabelling	
Supported	GetSeriesStyle	
Supported	GetSeriesTransparency	
Supported	Hide	
Unsupported	ImportClipboard	
Supported	ImportFile	
Supported	ImportString	
Supported	InsertCategory	
Supported	InsertData	The data point will be inserted according to the sorting rules of the Category axis.
Supported	InsertSeries	
Supported	ModifyData	
Supported	Move	
Supported	ObjectAtPointer	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	
Supported	Reset	
Supported	ResetDataColors	
Supported	Resize	
Unsupported	SaveAs	
Supported	SeriesCount	
Supported	SeriesName	
Unsupported	SetDataLabelling	
Supported	SetDataPieExplode	
Supported	SetDataStyle	
Unsupported	SetDataTransparency	
Supported	SetFocus	

Support Level	Feature Name	Description
Supported	SetPosition	
Supported	SetRedraw	
Unsupported	SetSeriesLabelling	
Supported	SetSeriesStyle	When using this function to set the overlay style of Graph DataWindow to "Scatter", it returns true and displays the DataWindow with all data points connected by lines. This is different from that in PowerBuilder.
Unsupported	SetSeriesTransparency	
Supported	Show	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.114: Properties

Support Level	Feature Name	Description
Unsupported	AccessibleDescription	
Unsupported	AccessibleName	
Unsupported	AccessibleRole	
Supported	BackColor	
Supported	Border	
Supported	BorderStyle	
Supported	BringToTop	
Supported	Category	
Supported	CategorySort	If the values of Category are multibyte characters (for example, Chinese characters), they will be sorted by internal statement number.
Unsupported	ClassDefinition	
Supported	Depth	
Unsupported	DragAuto	
Unsupported	DragIcon	
Supported	Elevation	
Supported	Enabled	
Supported	FocusRectangle	
Supported	GraphType	The following graph types are unsupported: Area3D!, Bar3DGraph!, Col3DGraph!, Line3D!, and Pie3D!.

Support Level	Feature Name	Description
Supported	Height	
Supported	Legend	
Supported	LegendDispAttr	
Supported	OverlapPercent	
Supported	Perspective	
Supported	PieDispAttr	
Supported on Web Only	Pointer	
Unsupported	Render3D	
Supported	Rotation	
Supported	Series	
Supported	SeriesSort	The result of this property may differ between Appeon Mobile and PowerBuilder, because changing other properties may affect the SeriesSort property in PowerBuilder but it does not affect that in Appeon Mobile. If the values of Category are multibyte characters (for example, Chinese characters), they will be sorted by internal statement numbers in Appeon Mobile.
Supported	ShadeColor	
Supported	Spacing	
Supported	TabOrder	
Supported	Tag	
Supported	TextColor	
Supported	Title	
Supported	TitleDispAttr	
Supported	Values	
Supported	Visible	
Supported	Width	
Supported	X	
Supported	Y	

4.3.1.8 grAxis

Table 4.115: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Unsupported	GetContextService	
Supported	GetParent	
Supported	TypeOf	

Table 4.116: Properties

Support Level	Feature Name	Description
Supported	AutoScale	
Unsupported	ClassDefinition	
Supported	DataType	In Appeon Mobile, if the datatype of axis is set to AdtDateTime!, a graph can only display the data for one day. It is unsupported to dynamically modify the GraphType property, if the datatype of the axis will be changed after the modification.
Supported	DispAttr	
Supported	DisplayEveryNLabels	
Supported	DropLines	
Supported	Frame	
Supported	Label	
Supported	LabelDispAttr	
Supported	MajorDivisions	
Supported	MajorGridLine	
Supported	MajorTic	
Supported	MaximumValue	
Supported	MaxValIDateTime	
Supported	MinimumValue	
Supported	MinorDivisions	
Supported	MinorGridLine	
Supported	MinorTic	
Supported	MinValDateTime	
Supported	OriginLine	
Supported	PrimaryLine	

Support Level	Feature Name	Description
Supported	RoundTo	
Supported	RoundToUnit	
Supported	ScaleType	Modifying the ScaleType property for an axis in Appeon Mobile will affect only the involved axis. This may differ from PowerBuilder. Graphs in Appeon Mobile will be displayed exactly as the settings of MajorDivisions, MinorDivisions, MaximumValue, and RoundTo. There is no displaying difference between the linear and logarithmic scaling.
Supported	ScaleValue	
Supported	SecondaryLine	
Supported	ShadeBackEdge	

4.3.1.9 grDispAttr

Table 4.117: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Unsupported	GetContextService	
Supported	GetParent	
Supported	TypeOf	

Table 4.118: Properties

Support Level	Feature Name	Description
Supported	Alignment	
Supported	AutoSize	
Supported	BackColor	
Unsupported	ClassDefinition	
Supported	DisplayExpression	When specifying the display expression in the Display Expression field, please notice the following unsupported features with the Columns box: 1) (For all graphs) percentofcategory and the percentofgraph are unsupported. 2) (For all graphs) percentofseries is unsupported when the text object is set to Value Axis Text or Legend.

Support Level	Feature Name	Description
		3) categorypercentofgraph and percentofseries are unsupported when the text object is set to Pie Graph Labels and there are multiple series. 4) (For pie graph only) percentofseries is unsupported when the text object is set to Legend.
Supported	Escapement	1) When the value of Escapement is a negative number, the text will not be rotated. 2) The text rotated can be displayed out of the control in PowerBuilder, but not in the mobile application. 3) After rotated, the multiple-line text still displays in multiple lines in PowerBuilder, but displays in one line in Appeon Mobile.
Supported	FaceName	
Supported	FillPattern	
Supported	FontCharSet	
Supported	FontFamily	
Supported	FontPitch	
Supported	Format	
Supported	Italic	
Supported	TextColor	
Supported	TextSize	
Supported	Underline	
Supported	Weight	

4.3.1.10 Inet

Table 4.119: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	

Table 4.120: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Unsupported	GetContextService	
Supported	GetParent	

Support Level	Feature Name	Description
Supported	GetURL	The return value in iOS and Android is as following: 1 -- Success. -1 -- General error: All the error except the following errors. -2 -- Invalid URL: Invalid URL or unsupported protocol. -4 -- Cannot connect to the Internet: This error is returned only when IE is set as offline state, but offline state does not exist in the mobile application.
Supported	HyperLinkToURL	In order for Android to recognize the URL, the URL must always start with "http://" or "https://", for example, "http://www.google.com", while iOS can recognize URLs without "http://" or "https://", for example, "www.google.com".
Supported	PostEvent	
Supported	PostURL	The return value in iOS and Android is as following: 1 -- Success. -1 -- General error: All the error except the following errors. -2 -- Invalid URL: Invalid URL or unsupported protocol. -4 -- Cannot connect to the Internet: This error is returned only when IE is set as offline state, but offline state does not exist in the mobile application. -5 -- Unsupported secure (HTTPS) connection attempted: HTTPS is supported in the mobile application, so this error will not return. -6 -- Internet request failed: server internal errors (such as 500), illegal request (such as 400), resource not found (such as 404), etc.
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.121: Properties

Support Level	Feature Name	Description
Unsupported	ClassDefinition	

4.3.1.11 InternetResult

Table 4.122: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	

Table 4.123: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Unsupported	GetContextService	
Supported	GetParent	
Supported	InternetData	
Supported	InternetStatus	
Supported	PostEvent	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.124: Properties

Support Level	Feature Name	Description
Unsupported	ClassDefinition	

4.3.1.12 JaguarORB

Table 4.125: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	
Supported	Error	

Table 4.126: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Unsupported	GetContextService	

Support Level	Feature Name	Description
Supported	GetParent	
Supported	Init	
Supported	Object_To_String	
Supported	PostEvent	
Supported	Resolve_Initial_References	
Supported	String_To_Object	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.127: Properties

Support Level	Feature Name	Description
Unsupported	ClassDefinition	

4.3.1.13 ListViewItem

Table 4.128: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Unsupported	GetContextService	
Unsupported	GetParent	
Supported	TypeOf	

Table 4.129: Properties

Support Level	Feature Name	Description
Unsupported	ClassDefinition	
Unsupported	CutHighlighted	
Supported	Data	
Unsupported	DropHighlighted	
Supported	HasFocus	
Unsupported	ItemX	
Unsupported	ItemY	
Supported	Label	In PowerBuilder, if the string label is too long to display in one line, the string will display in multiple lines. However, in the mobile application, the string will only display in one line.
Unsupported	OverlayPictureIndex	
Supported	PictureIndex	

Support Level	Feature Name	Description
Supported	Selected	
Supported	StatePictureIndex	

4.3.1.14 MDIClient

Table 4.130: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	Move	
Supported	Resize	
Supported	SetRedraw	
Supported	Show	
Supported	TypeOf	

Table 4.131: Properties

Support Level	Feature Name	Description
Supported	BackColor	
Unsupported	BringToTop	
Unsupported	ClassDefinition	
Supported	Height	
Supported	MicroHelpHeight	
Supported	Tag	
Supported	Visible	
Supported	Width	
Supported	X	
Supported	Y	

4.3.1.15 Menu

Table 4.132: Events

Support Level	Feature Name	Description
Supported	Clicked	Note: The Clicked event cannot be triggered for a menu item that has a submenu.
Unsupported	Help	

Support Level	Feature Name	Description
Supported	Selected	

Table 4.133: Functions

Support Level	Feature Name	Description
Supported	Check	
Supported	ClassName	
Supported	Disable	
Supported	Enable	
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	PopMenu	In PowerBuilder, the menu will pop up every time you click the mouse, while in Appeon Mobile, the odd number (n) of times when your finger taps, the menu will pop up, the even number (n+1) of times when your finger taps, the menu will disappear. In PowerBuilder, the menu pops up and the menu item is executed via "Trigger", while in Appeon Mobile, it is via "Post", which causes the scripts to be executed in a different order. To workaround this difference, move the scripts after PopMenu to another event, execute these scripts via PostEvent() after PopMenu is called. If the PopMenu is dynamically created, it cannot be destroyed until the scripts for the menu items are executed.
Supported	PostEvent	
Supported	Show	
Supported	TriggerEvent	
Supported	TypeOf	
Supported	Uncheck	

Table 4.134: Properties

Support Level	Feature Name	Description
Unsupported	BitmapBackColor	
Unsupported	BitmapGradient	
Supported	Checked	The Checked property of Menu always returns True in Appeon Mobile.
Unsupported	ClassDefinition	

Support Level	Feature Name	Description
Supported	Default	
Supported	Enabled	
Supported	FaceName	
Supported	Italic	

Supported	Item[]	Support using Item[] in different ways:
		`lm_onemenu = m_main.Item[1].Item[1]`
		`m_main.Item[1].Item[1].text = “open a Window”`
		`m_main.Item[1].Item[1].triggerevent(clicked)`
		Dynamically adding menu items with Item[] is supported.

Unsupported	MenuAnimation	
Unsupported	MenuBackColor	
Unsupported	MenuBitmaps	
Unsupported	MenuHighlightColor	
Supported	MenuImage	
Unsupported	MenuItemType	
Supported	MenuStyle	
Unsupported	MenuTextColor	
Unsupported	MenuTitles	
Unsupported	MenuTitleText	
Unsupported	MergeOption	
Unsupported	MicroHelp	
Supported	ParentWindow	
Unsupported	ShiftToRight	
Unsupported	Shortcut	
Supported	Tag	
Supported	Text	
Supported	TextSize	
Unsupported	TitleBackColor	
Unsupported	TitleGradient	
Unsupported	ToolbarAnimation	
Unsupported	ToolbarBackColor	
Unsupported	ToolbarGradient	
Unsupported	ToolbarHighlightColor	

Support Level	Feature Name	Description
Supported	ToolbarItemBarIndex	If the ToolbarItemBarIndex property is set to 0, the toolbar does not display in PowerBuilder but displays in Appeon Mobile.
Supported	ToolbarItemDown	
Supported	ToolbarItemDownName	
Supported	ToolbarItemName	
Supported	ToolbarItemOrder	
Unsupported	ToolbarItemSpace	
Unsupported	ToolbarItemText	
Supported	ToolbarItemVisible	
Unsupported	ToolbarStyle	
Unsupported	ToolbarTextColor	
Supported	Underline	
Supported	Visible	
Supported	Weight	

4.3.1.16 MenuCascade

Table 4.135: Events

Support Level	Feature Name	Description
Supported	Clicked	
Unsupported	Help	
Supported	Selected	

Table 4.136: Functions

Support Level	Feature Name	Description
Supported	Check	
Supported	ClassName	
Supported	Disable	
Supported	Enable	
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Supported	PopMenu	
Supported	PostEvent	

Support Level	Feature Name	Description
Supported	Show	
Supported	TriggerEvent	
Supported	TypeOf	
Supported	Uncheck	

Table 4.137: Properties

Support Level	Feature Name	Description
Supported	Checked	
Unsupported	ClassDefinition	
Supported	Columns	
Supported	CurrentItem	
Supported	Default	
Supported	DropDown	
Supported	Enabled	
Supported	Item[]	
Unsupported	MenuItemType	
Unsupported	MergeOption	
Supported	MicroHelp	
Supported	ParentWindow	
Supported	ShiftToRight	
Supported	Shortcut	
Supported	Tag	
Supported	Text	
Supported	ToolbarItemBarIndex	
Supported	ToolbarItemDown	
Supported	ToolbarItemDownName	
Supported	ToolbarItemName	
Supported	ToolbarItemOrder	
Supported	ToolbarItemSpace	
Supported	ToolbarItemText	
Supported	ToolbarItemVisible	
Supported	Visible	

4.3.1.17 Message

Table 4.138: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	

Table 4.139: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Unsupported	GetContextService	
Supported	GetParent	
Supported	PostEvent	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.140: Properties

Support Level	Feature Name	Description
Unsupported	ClassDefinition	
Supported	DoubleParm	
Unsupported	Handle	
Supported	LongParm	
Unsupported	Number	
Supported	PowerObjectParm	
Supported	Processed	
Unsupported	ReturnValue	
Supported	StringParm	
Supported	WordParm	

4.3.1.18 MLSync

Table 4.141: Events

Support Level	Feature Name	Description
Supported	BeginDownload	
Unsupported	BeginLogScan	
Supported	BeginSync	
Supported	BeginUpload	
Supported	ConnectMobiLink	

Support Level	Feature Name	Description
Supported	DisconnectMobiLink	
Unsupported	DisplayMessage	
Supported	EndDownload	
Unsupported	EndLogScan	
Supported	EndSync	
Supported	EndUpload	
Supported	ErrorMessage	
Unsupported	FileMessage	
Supported	ProgressIndex	The ProgressIndex event occurs periodically during synchronization. The value of the progress_idx and progress_max arguments is different from that in PowerBuilder. • The progress_max value of 100 indicates a new event begins and restarts a new progress. • The progress_idx<100 and max=0 indicate the progress has been pushed forward. • The progess_idx value of 100 and progress_max=0 indicates the progress has been completed.
Supported	SyncPreview	
Supported	UploadAck	
Supported	WaitForUploadAck	
Supported	WarningMessage	

Table 4.142: Functions

Support Level	Feature Name	Description
Unsupported	CancelSync	
Supported	GetCommandString	
Unsupported	GetDbmlsyncPath	On mobile, there is no dbmlsync.exe. When this function is called, it returns the empty string.
Supported	GetObjectRevisionFromRegistry	
Supported	GetSyncRegistryProperties	Only the following synchronization properties are supported by Appeon Mobile: • Host

Support Level	Feature Name	Description
		• MLUser • ObjectRevision • Port • Publication • TransName This property is defined by Appeon Mobile for holding the value for the corresponding TransName property in the Windows registry. The value of UlTrans of the SyncParm object will be automatically passed to this property.
Supported	SetNewMobiLink Password	
Supported	SetParm	
Supported	SetSyncRegistry Properties	Only the following synchronization properties are supported by Appeon Mobile: • Host • MLUser • ObjectRevision • Port • Publication • TransName This property is defined by Appeon Mobile for holding the value for the corresponding TransName property in the Windows registry. The value of UlTrans of the SyncParm object will be automatically passed to this property.
Supported	Synchronize	The synchronization interface with command line arguments is unsupported.

Table 4.143: Properties

Support Level	Feature Name	Description
Unsupported	AdditionalOpts	
Supported	AuthenticateParms	

Support Level	Feature Name	Description
Supported	DataSource	
Supported	DBPass	
Supported	DBUser	
Unsupported	EncryptionKey	This property is unsupported in Appeon Mobile, instead, you should input the encryption key when configuring the local database in the Appeon Developer. For details, refer to Section 4.2.1.2.6, “Offline Settings” in *Appeon Developer User Guide*.

Supported	ExtendedOpts	These three extended options are supported: sv, ctp and adr.
		• sv extended option:
		For the mobile application, when accessing the two-way synchronization between the consolidated database and the local UltraLite database, specify the sv option to set the value of the ScriptVersion. For example,
		`mySync_1.ExtendedOpts = "sv=test"`
		If the sv option is not specified, Appeon Mobile will automatically use the Publication value as the ScriptVersion value. When creating a synchronization model in Sybase Central, these two values are equivalent by default.
		• ctp & adr extended options for the encrypted transmission:
		`ctp=https;`
		`adr='host=192.0.2.15;`
		`PORT=2439;`
		`trusted_certificates=c:\%SQLANY12%\bin32\rsaroot.crt;`
		`certificate_name=RSA Server;`
		`certificate_company=test;`
		`certificate_unit=test'`
		Note: MobiLink supports the encrypted transmission of the synchronous data stream by using HTTPS on the iOS device only. When UltraLite uses HTTPS for the encrypted transmission, all the needed certificates must be stored in the directory where Appeon Workspace exists, but not in the directory where the application exists. However, in iOS and Android, this directory is read-only, which means you

Support Level	Feature Name	Description
		cannot store these downloaded certificates into the directory where Appeon Workspace exists. Therefore, UltraLite using HTTPS for the encrypted transmission is not supported by the standard Appeon Workspace. If you want to use HTTPS for the encrypted transmission of the synchronous data stream, you can only package the application as a native application or customize Appeon Workspace.
Supported	Host	The Host property will not take effect if the Key value of the license file is set as the adr option of the ExtendedOpts property.
Supported	LogFileName	Creates a log file if UseLogFile=true.
Unsupported	LogOpts	
Supported	MLPass	
Unsupported	MLServerVersion	
Supported	MLUser	
Supported	ObjectRevision	
Supported	Port	The Port property will not take effect if the Key value of the license file is set as the adr option of the ExtendedOpts property.
Supported	ProcessOption	
Supported	ProqressWindowName	
Supported	Publication	Multiple Publication names separated by commas are supported.
Supported	SyncRegistryKey	
Supported	UseLogFile	If true, creates a synchronization log. The log file will be written to the plugin folder under the application directory, for example, the **\appeon\AppData\Roaming\appeon \localhost_Dotnet_<application-name>\plugin** directory. Supports using PowerBuilder file functions to open text and blob files and to read and write to the log file.
Supported	UseWindow	
Supported	WindowObject	

4.3.1.19 SyncParm

Table 4.144: Properties

Support Level	Feature Name	Description
Supported	AuthenticateParms	
Supported	DBPass	
Supported	DBUser	
Supported	EncryptionKey	
Supported	MLPass	
Supported	MLUser	
Supported	ReturnCode	
Supported	UITrans	

4.3.1.20 Timing

Table 4.145: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	
Supported	Timer	In Android and iOS, MessageBox will block the execution of the Timer event.

Table 4.146: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Unsupported	GetContextService	
Supported	GetParent	
Supported	PostEvent	
Supported	Start	
Supported	Stop	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.147: Properties

Support Level	Feature Name	Description
Unsupported	ClassDefinition	
Supported	Interval	

Support Level	Feature Name	Description
Supported	Running	

4.3.1.21 Transaction

Table 4.148: Events

Support Level	Feature Name	Description
Supported	Constructor	
Unsupported	DBError	
Supported	DBNotification	
Supported	Destructor	
Unsupported	SQLPreview	

Table 4.149: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Supported	DBHandle	
Unsupported	GetContextService	
Supported	GetParent	
Supported	PostEvent	
Supported	SyntaxFromSQL	The following syntax is unsupported: `ls_dw_syntax = SyntaxFromSQL (sqlca, ls_sql_syntax, ls_style, ls_dw_err)` The data type of computed columns in SyntaxFromSQL cannot be the Appeon unsupported data type. The length of return value in Appeon Mobile is different from PowerBuilder. The return value of the SyntaxFromSQL function in Appeon Mobile contains a column name for each column although it is not in PowerBuilder. This function cannot generate correct source code for TreeView DataWindow. For offline applications, this function supports the DataWindow presentation style, but does not support specifying object keywords followed by properties and values to customize the DataWindow, because UltraLite and SQLite do not support the stored procedure.

Support Level	Feature Name	Description
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.150: Properties

Support Level	Feature Name	Description
Supported	AutoCommit	
Unsupported	ClassDefinition	
Supported	Database	
Supported	DBMS	Appeon extends this property so it can be used to specify the database interface of the data source that is used by the **CacheName** parameter. For values representing the different database interfaces, refer to Table 4.10, “Setting the DBMS property based on the database type” in *Appeon Server Configuration Guide for .NET* or Table 4.27, “Setting the DBMS property based on the database type” in *Appeon Server Configuration Guide for J2EE*.

Supported	DBParm	• The **ConnectString** parameter will be ignored when executed in the mobile or Web application, because the database connection for the mobile or Web application (called data source) is configured separately in Appeon or in the application server. For more, refer to Chapter 4, *Database Connection Setup* in *Appeon Server Configuration Guide for .NET* or Chapter 4, *Database Connection Setup* in *Appeon Server Configuration Guide for J2EE*.
		• The **EnabledLocalDB** parameter is specially provided and supported by Appeon Mobile only, therefore it will be ignored when executed in the PB application and Web application, and will only take effect when executed in the mobile application.
		The **EnabledLocalDB** parameter is required and should be set to **True** (or **Yes** or **1**), only if the mobile application wants to establish connection with the database on the local mobile device. For example,
		`SQLCA.DBMS = "ODBC"`
		`SQLCA.AutoCommit = False`

Support Level	Feature Name	Description
		SQLCA.DBParm = "ConnectString='DSN=Mobile15TestDB; UID=DBA;PWD=sql'; **EnabledLocalDB='true'**" • The **CacheName** parameter is enhanced by Appeon, so it is working differently when executed in the mobile or Web application than when executed in the PB application. **CacheName** is optional depending on the specific scenario of the database connection used in the mobile or Web application. If one transaction object needs to connect with more than one database, then **CacheName** can be used and set to the name of the data source (as shown in the code example below); if one transaction object connects with only one database, then **CacheName** might not be necessary, as you can statically map the transaction object with the data source in Appeon Developer or AEM. For more, refer to Section 4.5, “Setting up transaction object to data source mapping” in *Appeon Server Configuration Guide for .NET* or Section 4.4, “Setting up transaction object to data source mapping” in *Appeon Server Configuration Guide for J2EE*. For example, SQLCA.DBMS = "ODBC" SQLCA.AutoCommit = False SQLCA.DBParm = "ConnectString='DSN=Mobile15TestDB; UID=DBA;PWD=sql'; EnabledLocalDB='true'; **CacheName='MyUltralite'"** connect; …… disconnect; SQLCA.DBMS = "ODBC" SQLCA.AutoCommit = False SQLCA.DBParm = "ConnectString='DSN=Mobile15TestDB; UID=DBA;PWD=sql'; EnabledLocalDB='true'; **CacheName='MySQLite'"** connect; When **EnabledLocalDB='true'** which indicates the app should connect with the database on the local mobile device, the **CacheName** parameter (if used) should be set to the data source that is configured in Appeon Developer for the local

Support Level	Feature Name	Description
		offline database. For how to configure the data source for the local offline database, refer to Section 4.2.1.2.6, “Offline Settings” in *Appeon Developer User Guide*. When **EnabledLocalDB** is not used or **EnabledLocalDB='false'** which indicates the app should connect with the database on the back-end database server, the **CacheName** parameter (if used) should be set to the data source that is configured in AEM or application server for the server-side database. For how to configure the data source for the server-side database, refer to Chapter 4, *Database Connection Setup* in *Appeon Server Configuration Guide for .NET* or Chapter 4, *Database Connection Setup* in *Appeon Server Configuration Guide for J2EE*.
DSupported	DBPass	
Unsupported	Lock	
Supported	LogID	
Supported	LogPass	
Supported	ServerName	
Supported	SQLCode	`ll_value = sqlca.SQLCode` The returned value of SQLCode in Appeon: <0 – Error; the statement failed. This is different from PowerBuilder where -1 will be returned, while in Appeon, it could be any negative number when there is an error. Therefore, it is recommended to use <0 as the evaluation value for errors in both PowerBuilder and Appeon. 0 – Success. 100 – No result.
Supported	SQLDBCode	1) In PowerBuilder, if sqlca.SQLCode=100, then sqlca.SQLDBCode=3. In Appeon, when sqlca.SQLCode=100, then sqlca.SQLDBCode=0. 2) In the mobile application, SQLDBCode returns a different value from PowerBuilder. It is recommended not to use SQLDBCode in statements such as IF…ELSE.
Supported	SQLErrText	

Support Level	Feature Name	Description
Supported	SQLNRows	
Unsupported	SQLReturnData	
Supported	UserID	

4.3.1.22 TreeViewItem

Table 4.151: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Unsupported	GetContextService	
Supported	GetParent	
Supported	TypeOf	

Table 4.152: Properties

Support Level	Feature Name	Description
Supported	Bold	
Supported	Children	
Unsupported	ClassDefinition	
Unsupported	CutHighLighted	
Supported	Data	
Unsupported	DropHighLighted	
Supported	Expanded	
Supported	ExpandedOnce	
Supported	HasFocus	
Supported	ItemHandle	This property is supported but is read-only.
Supported	Label	
Supported	Level	
Supported	OverlayPictureIndex	
Supported	PictureIndex	
Supported	Selected	
Supported	SelectedPictureIndex	
Supported	StatePictureIndex	

4.3.1.23 UserObject

Table 4.153: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Unsupported	Help	
Unsupported	Other	
Supported	RButtonDown	

Table 4.154: Functions

Support Level	Feature Name	Description
Unsupported	AddItem	
Supported	ClassName	
Unsupported	CloseUserObject	
Supported	CreatePage	
Unsupported	DeleteItem	
Supported	Drag	
Unsupported	GetContextService	
Supported	GetParent	
Supported	Hide	
Unsupported	InsertItem	
Supported	Move	
Unsupported	OpenUserObject	
Unsupported	OpenUserObjectWith Parm	
Unsupported	PageCreated	
Supported	PointerX	
Supported	PointerY	
Supported	PostEvent	
Unsupported	Print	
Supported	Resize	
Supported	SetFocus	

Support Level	Feature Name	Description
Supported	SetPosition	
Supported	SetRedraw	
Supported	Show	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.155: Properties

Support Level	Feature Name	Description
Supported	BackColor	
Supported	Border	
Supported	BorderStyle	See Common Features.
Supported	BringToTop	
Unsupported	ClassDefinition	
Supported	ClassName	
Unsupported	ColumnsPerPage	
Supported	Control[]	
Unsupported	DragAuto	
Unsupported	DragIcon	
Supported	Enabled	
Supported	Height	
Supported	HScrollBar	
Unsupported	LibraryName	
Unsupported	LinesPerPage	
Supported	ObjectType	
Supported	PictureMaskColor	
Supported	PictureName	
Supported on Web Only	Pointer	
Unsupported	PowerTipText	
Unsupported	Style	
Supported	TabBackColor	
Supported	TabOrder	
Supported	TabTextColor	
Supported	Tag	

Support Level	Feature Name	Description
Supported	Text	
Unsupported	UnitsPerColumn	
Unsupported	UnitsPerLine	
Supported	Visible	
Supported	VScrollBar	
Supported	Width	
Supported	X	
Supported	Y	

4.3.1.24 WSConnection

Table 4.156: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	Destructor	

Table 4.157: Functions

Support Level	Feature Name	Description
Supported	ClassName	
Unsupported	GetContextService	
Supported	GetParent	
Supported	PostEvent	
Supported	TriggerEvent	
Supported	TypeOf	

Table 4.158: Properties

Support Level	Feature Name	Description
Supported	AuthenticationMode	
Unsupported	ClassDefinition	
Supported	ClientCertificateFile	
Supported	Endpoint	
Supported	Password	
Supported	ProxyServerHostName	
Supported	ProxyServerPassword	
Supported	ProxyServerPort	

Support Level	Feature Name	Description
Supported	ProxyServerUserName	
Supported	Timeout	
Supported	UserDomain	
Supported	UserName	
Supported	UseWindowsIntegrated Authentication	

4.3.2 Unsupported Objects

The following are the system objects that Appeon Mobile does not support:

Table 4.159:

ADOResultSet	ArrayBounds	ClassDefinition	ContextInformation
ContextKeyword	CORBACurrent	Enumeration Definition	EnumerationItem Definition
Error	ErrorLogging	Exception	MailFileDescription
MailMessage	MailRecipient	MailSession	MLSynchronization
OLEObject	OLEStorage	OLEStream	OLETxnObject
Pipeline	ProfileCall	ProfileClass	ProfileLine
Profiling	ProfileRoutine	ResultSet	ResultSets
RuntimeError	ScriptDefinition	SimpleTypeDefinition	SSLCallBack
SSLServiceProvider	Throwable	TraceActivityNode	TraceBeginEnd
TraceError	TraceESQL	TraceFile	TraceGarbageCollect
TraceLine	TraceObject	TraceRoutine	TraceTree
TraceTreeError	TraceTreeESQL	TraceTreeGarbage Collect	TraceTreeLine
TraceTreeNode	TraceTreeObject	TraceTreeRoutine	TraceTreeUser
TransactionServer	TraceUser	TypeDefinition	ULSync
VariableCardinality Definition	VariableDefinition		

5 PowerScript Reference

5.1 PowerScript Topics

5.1.1 Object-Oriented programming

The application may make use of the powerful object-oriented programming techniques that are typically found in PowerBuilder applications:

- Inheritance

  Creating a new control in a child object by copying and pasting an existing control in the PowerBuilder painter is unsupported if the existing control is inherited from the parent object.

- Encapsulation

- Polymorphism

5.1.2 Language Basics

5.1.2.1 Comments

Supported

1. Common Comments

   - Double-slash method: *Code* // *Comment*

     ```
     A= B + C // Comment
     ```

   - Slash-and-asterisk method: /* *Comment* */

     ```
     A= /* comment */ B + C
     ```

2. Embedded comments

   // *Comment1* /* *Comment2*

   /* *Comment1* // *Comment2* */

   /* *Comment1* /* *Comment2* */ *Comment3* */

   For example:

   ```
   A = B + C /* This comment starts here.
   /* This is the start of a nested comment. The nested comment ends here. */
   The first comment ends here.
   */ + D + E + F
   ```

Unsupported

Do not use the double-slash method to comment out scripts in the SQL statement for DataWindows.

5.1.2.2 Identifiers

Supported

Identifiers in Appeon refer to global/instance/local variable names, or object names, or **menu names & menu item names**. Note that **menu names & menu item names** are regarded as identifiers.

Rules for identifiers:

- Identifiers can be reserved words in JavaScript, apart from the identifier word "Object".
- Can have up to 40 characters but no spaces.
- Must start with a letter or an underscore ("_") and can include any combination of the letters, numbers and special characters listed in Appeon supported identifiers.
- In the case of duplicate objects, objects earlier in the PBL list overwrite those later in the PBL list.

Unsupported

- Objects of different types cannot have the same name.
- Objects of the same type, even if they are in different PBLs, cannot have the same name.
- Instance variable and function in the same object cannot have the same name.
- The "#" will not be automatically converted to "#" in Appeon.
- Identifiers cannot be reserved words in Appeon: appeondatawindow, appeondatastore, appeonservice, appeon_nvo_db_update, appeonextfuncs, appeonfileservice, ejbserial, ejbobject and parse_retval_object.

5.1.2.2.1 Appeon Supported Identifiers

Letters, numbers or special characters with Unicode listed below or within the intervals are supported.

- All intervals are closed intervals.
- Cannot start with the letter, number or special character corresponding to the Unicode (or within the intervals) marked with "*".

Table 5.1:

30-39 *	41-5A	5F	61-7A	B7 *	C0-D6
D8-F6	F8-131	134-13E	141-148	14A-17E	180-1C3
1CD-1F0	1F4-1F5	1FA-217	250-2A8	2BB-2C1 *	2D0-2D1 *
300-345 *	360-361 *	386	387*	388-38A	38C
38E-3A1	3A3-3CE	3D0-3D6	3DA	3DC	3DE
3E0	3E2-3F3	401-40C	40E-44F	451-45C	45E-481
483-486 *	490-4C4	4C7-4C8	4CB-4CC	4D0-4EB	4EE-4F5
4F8-4F9	531-556	559 *	561-586	591-5A1 *	5A3-5B9 *

5BB-5BD *	5BF *	5C1-5C2 *	5C4 *	5D0-5EA	5F0-5F2
621-63A	640 *	641-64A	64B-652 *	660-669 *	670 *
671-6B7	6BA-6BE	6C0-6CE	6D0-6D3	6D5	6D6-6E8 *
6EA-6ED *	6F0-6F9 *	901-903 *	905-939	93C-94D *	951-954 *
958-961	962-963 *	966-96F *	981-983 *	985-98C	98F-990
993-9A8	9AA-9B0	9B2	9B6-9B9	9BC *	9BE-9C4 *
9C7-9C8 *	9CB-9CD *	9D7 *	9DC-9DD	9DF-9E1	9E2-9E3 *
9E6-9EF *	9F0-9F1	A02 *	A05-A0A	A0F-A10	A13-A28
A2A-A30	A32-A33	A35-A36	A38-A39	A3C *	A3E-A42 *
A47-A48 *	A4B-A4D *	A59-A5C	A5E-A5E	A66-A74 *	A81-A83 *
A85-A8B	A8D	A8F-A91	A93-AA8	AAA-AB0	AB2-AB3
AB5-AB9	ABC-AC5 *	AC7-AC9 *	ACB-ACD *	AE0	AE6-AEF *
B01-B03 *	B05-B0C	B0F-B10	B13-B28	B2A-B30	B32-B33
B36-B39	B3C-B43 *	B47-B48 *	B4B-B4D *	B56-B57 *	B5C-B5D
B5F-B61	B66-B6F *	B82-B83 *	B85-B8A	B8E-B90	B92-B95
B99-B9A	B9C	B9E-B9F	BA3-BA4	BA8-BAA	BAE-BB5
BB7-BB9	BBE-BC2 *	BC6-BC8 *	BCA-BCD *	BD7 *	BE7-BEF *
C01-C03 *	C05-C0C	C0E-C10	C12-C28	C2A-C33	C35-C39
C3E-C44 *	C46-C48 *	C4A-C4D *	C55-C56 *	C60-C61	C66-C6F *
C82-C83 *	C85-C8C	C8E-C90	C92-CA8	CAA-CB3	CB5-CB9
CBE-CC4 *	CC6-CC8 *	CCA-CCD *	CD5-CD6 *	CDE	CE0-CE1
CE6-CEF *	D02-D03 *	D05-D0C	D0E-D10	D12-D28	D2A-D39
D3E-D43 *	D46-D48 *	D4A-D4D *	D57 *	D60-D61	D66-D6F *
E01-E2E	E30	E31 *	E32-E33	E34-E3A *	E40-E45
E46-E4E *	E50-E59 *	E81-E82	E84	E87-E88	E8A
E8D	E94-E97	E99-E9F	EA1-EA3	EA5	EA7
EAA-EAB	EAD-EAE	EB0-EB9 *	EBB-EBD *	EC0-EC4 *	EC6 *
EC8-ECD *	ED0-ED9 *	F18-F19 *	F20-F29 *	F35 *	F37 *
F39 *	F3E-F3F *	F40-F47	F49-F69	F71-F84 *	F86-F8B *
F90-F95 *	F97 *	F99-FAD *	FB1-FB7 *	FB9 *	10A0-10C5
10D0-10F6	1100	1102-1103	1105-1107	1109	110B-110C
110E-1112	113C	113E	1140	114C	114E
1150	1154-1155	1159	115F-1161	1163	1165
1167	1169	116D-116E	1172-1173	1175	119E
11A8	11AB	11AE-11AF	11B7-11B8	11BA	11BC-11C2
11EB	11F0	11F9	1E00-1E9B	1EA0-1EF9	1F00-1F15

1F18-1F1D	1F20-1F45	1F48-1F4D	1F50-1F57	1F59	1F5B
1F5D	1F5F-1F7D	1F80-1FB4	1FB6-1FBC	1FBE *	1FC2-1FC4
1FC6-1FCC	1FD0-1FD3	1FD6-1FDB	1FE0-1FEC	1FF2-1FF4	1FF6-1FFC
20D0-20DC *	20E1 *	2126 *	212A-212B *	212E *	2180-2182 *
3005 *	3007	3021-302F *	3031-3035 *	3041-3094	3099-309A *
309D-309E *	30A1-30FA	30FC-30FE	3105-312C	4E00-9FA5	AC00-D7A3

5.1.2.3 Labels

Labels and GOTO statements are unsupported.

5.1.2.4 Special ASCII characters

Supported

Table 5.2:

ASCII character	To Specify This	Enter This
Common ASCII characters	Newline	~n
	Tab	~t
	Carriage return	~r In Appeon, "~r" is considered a newline character.
	Formfeed	~f
	Backspace	~b
	Double quote	~"
	Single quote	~'
	Tilde	~~
Any ASCII character	Hexadecimal	~h##
	Octal	~o###

Unsupported

1. In a mobile application, a character whose ASCII value is greater than 127 cannot be saved to the database.
2. In PowerBuilder, for characters whose ASCII value is greater than 128, the equal operator will consider them the same. However, in Appeon, the equal operator will not consider them the same.
3. Common ASCII character: Vertical tab (~v)
4. Any ASCII character: Decimal (~###). Note: Appeon ignores the escape character ("~") specified in the PowerBuilder painter. In SQL statements, "~" is handled as escape character.
5. Tilde ("~") on mobile may not take effect if it is contained in a nested string that is a variable or it is contained in a string whose nested level is up to two.

5.1.2.5 Null values

Supported

NULL means undefined or unknown. It is not the same as an empty string, a zero, or a date of 0000-00-00. For example, NULL is neither 0 nor "" (empty string).

Null in PowerBuilder is directly translated into Null in JavaScript.

Unsupported

Expressions involving Null values may arrive at different values in JavaScript from their values in PowerScript. For example, the expression A + B in PowerScript will return Null if any of A or B is Null. However, in JavaScript, the expression will not return Null even if A or B is Null. >In addition, an arithmetic or relational operation involving a null value always returns null in PowerBuilder. As shown in the following table, the return value is not always null in JavaScript:

Table 5.3:

Operation		**Return Value**	
Assuming SetNull(A), SetNull(B)		PowerBuilder	JavaScript
Arithmetic	A+1	Null	1
	A+B	Null	0
	A*B	Null	0
Relational	A=1	Null	False
	A<>1	Null	True
	NOT (A=1)	Null	True
	A=A	Null	True
	A=B	Null	True
	IsNull(A=1)	True	False
String concatenation	A+"ABC"	Null	"NULLABC"
	A+B	Null	"NULLNULL"

5.1.2.6 Reserved words

Supported Reserved Words

Table 5.4:

and	call	case	catch	choose	close	commit	connect
constant	continue	create	cursor	declare	delete	describe	disconnect
do	dynamic	else	elseif	end	event	execute	exit
false	fetch	first	for	forward	from	function	global
halt	if	immediate	insert	into	is	last	loop
next	not	of	on	open	or	parent	post
prior	prepare	ref	return	rollback	rpcfunc	select	step
subroutine	super	then	this	to	trigger	true	try

type	until	update	using	while	with	within	selectblob
updateblob							

- The reserved word **HALT** is supported, but the code after the Halt statement will not be executed in Appeon Mobile.
- **PROCEDURE** can only be used in the DECLARE Procedure SQL statement.

Unsupported Reserved Words

Table 5.5:

enumerated	external	finally	goto	indirect	intrinsic	library	system
systemread	systemwrite	throw	throws	Eon	EonApp	EonObject	EonStatic
EonMenu	PB	PBGlobal	PBArray				

5.1.2.7 Pronouns

Supported

The following pronouns in PowerScript are supported:

- Parent - refers to the object that contains the current object.

  Using Parent in the script for a visual user object is supported.
- This - refers to the window, user object, menu, application object, or control that owns the current script.
- Super - refer to the immediate ancestor for a descendant object or control.

Unsupported

None.

5.1.2.8 Statement continuation & separation

Supported

- The statement continuation character (&) and syntax are supported. The syntax is as follows:

```
Start of statement &
more statement &
end of statement
```

- The statement separation character (;) and syntax are supported. The syntax is as follows:

```
Statement1;statement2
```

Note: White Space (Blanks, tabs, formfeeds, and comments) in the statement is supported and treated the same way as in PowerBuilder.

Unsupported

None.

5.1.3 Data Types

5.1.3.1 Standard data types

Supported

Appeon supports all standard PowerBuilder data types as outlined in the table below:

Table 5.6:

Blob	Boolean	Byte	Char or character	Date
DateTime	Decimal or Dec*	Double	Integer or Int	Long
Real	String	Time	UnsignedInteger, UnsignedInt, or UInt	UnsignedLong or ULong

The decimal precision is extended from 15 digits to 28 digits in DataWindow. However, you cannot manipulate 28-digit Decimal in a datawindow via Get/Set function and dot notation.

Decimal in DataWindow

The decimal precision extends to 28 digits in a DataWindow by enabling the 28-digital Decimal option in AEM.

1. **Precision**

   With 28-digit Decimal option, the decimal precision in DataWindow supports up to 28 digits and ranges from -39,614,081,257,132,168,796,771,975,167 to +39,614,081,257,132,168,796,771,975,167.

2. **Function Limitations**

   - 28-digit Decimal supports the following arithmetic operators:

     Arithmetic operators: "+", "-", "*", "/"

     Relational operators: =, >, <, <>, >=, <=

   - 28-digit Decimal is supported in the following DataWindow expressions: Abs, Avg, CumulativeSum, Median, Sign, and Sum.

3. **Function Differences**

   - In the calculation, values/variables of Double or Real data type are handled as values/variables of Decimal data type.

   - Constants in an expression will be handled as Double datatype if the expression is being dynamically modified and contains relational operators (=, >, <, <>, >=, <=).

   - Constants in an expression will be handled as Decimal data type if the expression is being dynamically modified and contains arithmetic operators ("+", "-", "*", "/")

   - Appending the letter D in uppercase or lowercase to identify a number as a decimal constant in a DataWindow expression is unsupported in 28-digit decimal.

- Decimal displaying in the DataWindow in Appeon may differ from that in PowerBuilder. Sometimes Decimal displays in scientific notation in PowerBuilder but displays in standard notation in Appeon.
- If exceeding 28 digits, the decimal number cannot be correctly displayed on mobile.

Differences

- UnsignedLong (32-bit) and UnsignedInteger (16-bit)

  The UnsignedLong (32-bit) and UnsignedInteger (16-bit) data types are handled as Long and Integer. Therefore, the supported range for UnsignedLong is from 0 to 4,294,967,295, and the supported range for UnsignedInteger is from 0 to 65,535.

- Decimal, Real and Double

  In operations that contain calculations of precision, values/variables of Decimal or Real data type are handled as values/variables of Double data type.

  In operations that do not contain calculations of precision, values/variables of Double or Real data type are handled as values/variables of Decimal data type.

- You must ensure that the result of a numeric expression will not cause overflow in PowerBuilder. Otherwise the result on mobile is different from that in PowerBuilder.

5.1.3.2 Any data type

Any data type is fully supported, with the exception as follows:

- Assigning the return value of a String function to an Any variable that has not been previously assigned is unsupported.
- Using Any in the OCX is unsupported.
- Using Any array is only supported in the retrieval argument.
- Using Any array in a dot notation is unsupported. To work around it, you can use Any variable instead of Any array.

  For example:

  Unsupported code 1:

```
Any la_data
La_data = dw_2.object.data
Dw_1.object.data = la_data
```

  Unsupported code 2:

```
Any la_data[ ]
La_data[1] = dw_2.object.data[1]
Dw_1.object.data[1] = la_data[1]
```

  Supported code 1:

```
dw_2.object.data = dw_1.object.data
```

  Supported code 2 (Appeon Web only):

```
any la_data1
la_data1 = dw_1.object.data
```

5.1.3.3 System object data types

Supported

- Autoinstantiated object data types:

  NVOs (Class User Object) with their Autoinstantiate property checked;

  Structure data types;

  Autoinstantiated system objects: ListViewItem, TreeViewItem.

- Nonautoinstantiated object data types:

  NVOs (Class User Object) with their Autoinstantiate property unchecked;

  Visual controls (user-defined visual controls and system controls)

  Nonautoinstantiated system objects, including: Application, DataStore, DataWindowChild, DynamicStagingArea, MDIClient, Menu, Message, Transaction Object, Window.

- PowerObject classes:

  The supported PowerObject classes include DragObject, DWObject, GraphicObject, PowerObject, and WindowObject.

  Note: In the mobile application, because the declaration of a PowerObject does not specify the object type, the initial value of the variable is NULL. Therefore, when the IsValid function is executed, IsValid returns NULL.

Unsupported

- Among all the supported system objects and system controls, if the data type is a non-global Transaction Object, the data type is not supported.
- If the data type is an unsupported system object or system control, it is unsupported.
- Do not refer to a DataWindow object by using global functions or instance variables. Otherwise the executing result will has error on mobile.

5.1.3.4 Enumerated data types

Supported

All system-defined enumerated data types and values are supported, unless the enumerated data type belongs to an unsupported feature.

Unsupported

Enumerated data types have predefined sets of values. Most of the PowerBuilder enumerated data types have default values. Using the default values of enumerated data types is unsupported.

5.1.3.5 Forced conversion between data types

Supported

1. Forced conversion between string and char data type:

   - Assigning strings to char arrays
   - Assigning char arrays to strings
   - When a string literal is assigned to a char variable, the first character of the string literal is assigned to the variable.

     For example:

     ```
     char c = "xyz" //results in the character x being
              assigned to the char variable c.
     ```

   - Special characters (such as new line, form feed, octal, hex, etc.) can be assigned to char variables using string conversion.

     For example:

     ```
     char c = "~n"
     ```

   - A char variable assigned to a string variable results in a one-character string.
   - Expressions using both strings and char arrays promote the chars to strings before evaluation.

     For example:

     ```
     char c if (c = "x") then // promotes the contents
              of c to a string before comparison with the string "x"
     ```

   - Using chars in PowerScript functions. All PowerScript functions that take strings also take chars, subject to the above described conversion rules.

2. Forced conversion between numeric data types:

   - The order of precedence in PowerBuilder regarding numeric data types is supported. The following is the order of precedence from highest to lowest (based on the range of values for each data type):

     (High) Double >> Real >> Decimal >> UnsignedLong >> Long >> UnsignedInteger >> Integer (Low)

   - If operands in an expression have different data types, the value whose type has lower precedence is converted to the data type with higher precedence.

     For example:

     ```
     int x; x=2.4
     PowerScript result: the value of x is actually 2,
     because x is defined as an integer.
     PowerBuilder will cut the digit after the decimal point, then assign 2 to x.
     ```

   - Unsigned type has precedence over signed. So if one operand is signed and the other is unsigned, both are promoted to the unsigned version of the higher type. For example, if one operator is a Long and another an UnsignedInteger, both are promoted to UnsignedLong.

- Transform other numeric data types recessive to integer or int data. A force conversion from other numeric data to int/long data will arrive at the same value in PowerScript and JavaScript.

Unsupported

- In PowerBuilder, when Time data type is automatically converted into DateTime, the date is always 1900-01-01. Thus, the DataWindow always gets a value of DateTime type: Retrieve (1900-01-01 xx:xx:xx).However, if connected to a JDBC SQL Server, the default date is the current day. In other words, DataWindow gets Retrieve(today xx:xx:xx) when Time data type is automatically converted into DateTime.

Difference

When assigning a numeric number to an Any data, a forced conversion from Any to Integer may arrive at different values in PowerBuilder and on mobile. For example,

```
Integer li_value
any la_value = 3.5
li_value = Integer(la_value) // li_value will be 3 on mobile and 4 in PowerBuilder.
```

5.1.4 Declarations

5.1.4.1 Variables and constants

Table 5.7:

Variable scope	**Supported**
	Global, local and instance
	Unsupported
	Shared
Variable declaration syntax	**Supported**

	`datatype { { size } } { { precision } }`
	`variablename { = value }`
	`{, variablename2 { = value2 } }`
	The datatype can be any standard type and system object type.
	Declaring multiple variables of the same type at one time is supported.
	For example:
	`integer li_a=5, li_b=10`
	Naming variables with Non-English characters or numbers.

	Unsupported
	When a global decimal variable is declared, or a decimal constant is used to declare a variable, the specification of precision for the global decimal or the decimal constant will be ignored.

	A variable having the same name as a global variable is or a global function is unsupported. A global variable cannot have the same name as a control in a window. For example, if there is a GroupBox control named as **gb_1**, the following syntax is unsupported: `Global Boolean gb_1` Placing a cursor or stored procedure declaration in the declaration of instance variables is unsupported.
Global scope operator (::)	**Unsupported**
	Referring to a global variable by using the global scope operator (::) before the variable name is unsupported; (i.e. The syntax with "::globalname" is unsupported).
Constant type	**Supported**
	All of the standard data types
Constant declaration syntax	**Supported**

	`CONSTANT datatype constname = value`
	The constant can only be public.
	It is supported if the value is an expression.
	For example:
	`constant date ld_date = today()`

Access to Instance Variables	**Unsupported**
	When the instance variable is passed by reference to a script and before the execution of this script is finished, if the value of this instance variable is changed, Appeon cannot capture the changes. When the instance variable is defined in a custom class, it cannot be accessed directly using the class dot notation, for example, the following script will not work on mobile: mle_Result.Text = n_cst_test.COMPANYNAME, n_cst_test is the name of the custom class and COMPANYNAME is its instance variable. But you can work it around by creating an object first and then using the object to access the instance variable.
Initial values of variables and constants	**Supported**
	When a variable or constant is declared, a default initial value is automatically assigned or an initial value can be specified in the declaration. The initial values of enumerated data types are converted to null in JavaScript. Except for the initial values of enumerated data types and the Any data type, the default initial values in PowerScript are supported.

	Unsupported

	There are different rules in PowerBuilder than in JavaScript if specifying an expression as an initial value:
	It is unsupported to use the instance constants of a non-instantiated object.
	With the syntax datatype variable = expression, in PowerBuilder, the expression's value is assigned to the variable when the script is compiled (not during execution). In JavaScript, the expression's value is set to the variable during execution. For example, if the declaration is the following:
	`date d_date = Today( )`
	The value of d_date is the date when the script is compiled in PowerBuilder, and it is the date when the application is running in JavaScript.
	Therefore, making the declaration of a variable and assigning it with the initial value in separate PowerScript statements is recommended.
	For example:
	`date d_date`
	`d_date = Today( )`

5.1.4.2 Arrays

5.1.4.2.1 Declaration syntax

- The declaration syntax for arrays is supported:

```
{ access } datatype variablename { d1, ..., dn } { = { valuelist } }
```

- The access is always PUBLIC.
- The datatype cannot be an unsupported data type (refer to the data type section). For decimals, you can specify the precision of the data by including an optional value in brackets after the datatype. For example,

```
decimal {2} ld_prices[ ]
```

- Both variable-size arrays and fixed-size arrays are supported.

```
date ld_birthdays[ ]
string ls_array[10 ]
```

- Arrays with specified lower bound and upper bound are supported, even if the lower bound is a non-integer or a negative value. If the lower bound is not an integer, it will be rounded off.

```
string ls_name[-10 to 15]
```

- Both single-dimensional and multi-dimensional arrays are supported.

```
integer ls_array[10]
integer li_score[2,3]
```

- Using TO to change array index values is supported.

```
integer li_staff[100, 0 to 20, - 3 to 5]
```

- Multiple arrays of the same type can be declared simultaneously.

```
string ls_array1[10], ls_array2[5], ls_array3[100]
```

- Assigning an array to an array is unsupported if the array elements of Any data type. For example,

```
any la_1[3], la_2[4]
...
la_1[1] = la_2[4] // Unsupported
```

5.1.4.2.2 Initialization and assignment

Supported

- Each element of an array can be initialized to the same default value as its underlying data type. The default value for string data type elements is ""; the default value for numeric data type element is 0.
- The default length of variable-size arrays is 0, which means that the array does not have any elements. Initializing several elements of variable-size array is supported if the element after the several elements is assigned with a value.

  Example:

```
integer li_array []
li_array[8]=8 //The values of li_array[1], ? li_array[7] are
initialized to the default value 0
```

- Using arraylists to assign values to an array, or assign values to array elements separately, is supported. There can be expression(s) in the arraylist. The result will be the same as in PowerBuilder.

```
li_array[10] = {1,2,3,4,5}
li_array[3,2] = {1,2,3,4,5}
ld_date = {today(),relativedate(today(),1), 2002-12-31}
```

- Assigning one array to the another is supported. The result will be the same as in PowerBuilder.
  - Assigning a variable-size array to another variable-size array.

    Example:

```
integer li_test1[]={1,2,3,4,5}
integer li_test2[] ={10,20,21,22,23,24,25,26,27}
...
li_test2=li_test1
```

    If the array type is NVO, the assignment operation does not trigger the Constructor event.

- Assigning a fixed-size array to another fixed-size array. It can be between one-dimensional arrays, or between one-dimensional array and a multi-dimensional array, or between multi-dimensional arrays.

  Example:

```
integer li_test0[10] ={21,22,23,24,25,26,27,28}
integer li_test1[5]={1,2,3,4,5}
integer li_test2[2,6] = {11,12,13,14,15,16,17,18}
integer li_test3[2,3,5] = {11,12,13,14,15,16,17,18}

li_test1=li_test0 //assign a one-dimensional array to
another one-dimensional array
li_test2=li_test1 //assign a one-dimensional array to
a multi-dimensional array
li_test1=li_test2 //assign a two-dimensional array to
a one-dimensional array
li_test3=li_test2 //assign a multi-dimensional array to
another multi-dimensional array
```

- Assigning a variable-size array to a fixed-size array.

  Example:

```
integer li_test0[] ={21,22,23,24,25,26,27,28}
integer li_test1[10]={1,2,3,4,5}
li_test1=li_test0
```

- Assigning a fixed-size array to a variable-size array.

  Example:

```
integer li_test1[10]={1,2,3,4,5}
integer li_test0[]
li_test0[30] = 100
li_test0=li_test1 //the element number of the li_test0 will be 10
```

- Reinitializing arrays with the following steps is supported:

  1. Declare a dummy array of the same type (never put any values into the array).
  2. Simply set originalarray = dummyarray.

  This will clear out the original array and cause UpperBound to return the correct value. The same rule applies to PowerBuilder.

- The index of an array can be an expression.

  Example:

```
for A = 1 to upperbound(ls_array)
ls_array[A,1] = ......
end for
ls_array[integer(ltvi_item.data)] =123
```

Unsupported

- Assigning values between instance variables of structure type is unsupported. For example, the following lines of code are unsupported:

```
Str_a L1
Str_b L2
L1 = L2
```

- Assigning structure arrays to non-structure arrays is unsupported. For example, the following lines of codes are unsupported:

```
str_dwstruct lst_dwstr[]
powerobject po_ary[]
po_ary = lst_dwstr // Unsupported
```

5.1.4.2.3 Passing arrays as arguments

Passing a variable-size or fixed-size array as an argument is supported. For example:

```
uf_convertarray(a) //integer a[]
uf_convertarray(a) //integer a[10]
```

Passing array elements as arguments by reference is unsupported; only the first element is passed and used as the value for all other elements. For example, the following code is unsupported:

```
lnv_bug.of_test( ls_var1, ls_var2, ls_ref[1], ls_ref[2], ls_ref[3], ls_ref[4],
 ls_ref[5],
ls_ref[6], ls_ref[7], ls_ref[8], ls_ref[9], ls_ref[10])
```

The following two syntaxes will get the same result for one-dimensional, multi-dimensional, or variable-size arrays:

```
li_upper = upperbound(ls_array)            // string
ls_array[]
li_upper = upperbound(ls_array [])         // string
ls_array[]
```

5.1.4.2.4 Complex arrays

- Structure arrays are supported. The declaration, initialization and assignment of structure arrays comply with the general rules for standard arrays.
- UserObject arrays are supported. Please refer to the User Object section for details.
- Nested arrays are supported.
- Enumerated type arrays are supported.

5.1.4.2.5 Unsupported

If arguments of a function are arrays, arguments and corresponding actual parameters cannot be of different dimensions.

5.1.4.3 External functions

Supported

- Declaring and calling local external functions
- Declaring and calling global external functions
- Data types of external function arguments can be the following:

Array, Boolean, Blob, Char, Date, DateTime, Double, Decimal, Integer, Long, Real, String, Structure, and Void

- Data types of external function return values can be the following:

  Array, Boolean, Blob, Char, Date, DateTime, Double, Decimal, Integer, Long, Real, String, Structure, Unsigned Integer, Unsigned Long, and Void

5.1.5 Operators & expressions

Supported operators and expressions

- Arithmetic operators for numeric data types: +, -, *, /, ^, ++, --, +=, -=, *=, /=, ^=
- Relational operators for all data types: =, >, <, <>, >=, <=, NOT, AND, OR
- The concatenation operator for String data types: +
- DataWindow expressions are supported
- The supported features of operators & expressions are related to null values and forced conversion.

Precedence of supported operators

These operators will follow the order of precedence listed in the table below:

Table 5.8:

Order	Operator	Purpose
1	( )	Grouping
2	+, -, NOT	Unary plus (indicates positive number), unary minus (indicates negative number), Negation
3	^	Exponentiation
4	*, /	Multiplication and division
5	+, -	Addition and subtraction; string concatenation
6	>, <, <=, >=	Relational operators
7	=,	Relational operators
8	AND	Logical and
9	OR	Logical or

Unsupported

Avoid data overflow in the application. If there is data overflow, the mobile application handles the data differently from the PowerBuilder application.

5.1.6 Structures

5.1.6.1 Definition and declaration of structures

1. Defining a structure in the Structure painter or an object painter is supported:

- If the structure is defined in the Structure painter, the structure is global structure, and instances of the structure can be declared in a script or in an object's instance variable.
- If the structure is defined in an object painter, the structure is an object structure, and instances of the structure can only be declared in the object's instance variables and script. An object structure can be defined in any of the following painters: Application, Window, Menu, Function or UserObject.

2. Declaring global or local instances for global structures is supported. Declaring instance and local instances for object structures is also supported. Several instances for a structure can be declared at one time.

   For example:

```
str_emp_data str_emp1, str_emp2
```

3. Declaring structure arrays is supported. The arrays can be single or multi-dimensional, variable-sized or fixed sized. The supported features for structure arrays are the same as the supported features for any other arrays.

   For example:

```
s_ employee lstr_temp[10]
s_ employee lstr_employee[]
```

4. If an object structure's name is identical to that of a global structure, the object structure has higher priority than the global structure (same as in PowerBuilder).

5.1.6.2 Referring to structure variables

The following syntaxes are supported:

```
structurename.variable           //referring to a structure variable by using
dot notations
objectname.structurename.variable //referring to a variable of an object
structure
```

For example:

```
str_emp1.emp_lname = "Jones"
This.str_cust1.name
w_customer.str_cust1.name
```

5.1.6.3 Initialization and assignment of structure variables

For each variable of a structure, the variable will be initialized with default values according to its data type. If it is a string type variable, the default value is ""; if it is numeric type variable, the default value is 0.

A structure instance can be assigned when it is declared or after it is declared.

For example:

```
s_employee lstr_ouremployee1, lstr_outemployee2
s_employee lstr_youremployee = lstr_ouremployee1
lstr_youremployee = lstr_ouremployee2
```

As in PowerBuilder, when assigning one structure to another, the whole structure is copied so that there are two copies of the structure.

5.1.6.4 Passing structures as arguments

Passing structures as arguments by value, by reference, or as read-only is supported.

5.1.6.5 Complex structures

The following types of complex structures are supported:

- Structures which have one or more of their structure variables being referred to another structure.
- One or more structure variables which are autoinstantiated or non-autoinstantiated objects.

  For example:

```
s_employee lstr_employee[]           //the structure
s_employee is defined with a DataWindow type variable
long ll_employee
lstr_employee[1].adw_employee = w_employee.dw_1
ll_employee = lstr_employee[1].adw_employee.Retrieve( )
```

- One or more structure variables which are arrays that have no unsupported features.

5.1.6.6 Unsupported

- Cross-definition of structures. For example, structure A has a structure variable that is structure B, while structure B has a structure variable that is structure A.
- Inheritance of an object structure is unsupported; inheritance of an object structure instances is unsupported as well.
- If one or more member variables in the structure are unsupported data types, Appeon still supports the structure as long as unsupported variables are not used.
- If there are member variables of enumerated data type in the structure, the default values of the enumerated variables are unsupported.
- Comments of the structure are unsupported.

5.1.7 User Objects

5.1.7.1 User objects

Important Requirements

- For standard class user objects:

  1. Standard class user objects can only inherit from the following non-visual system objects: DataStore, Transaction Object, DynamicStagingArea and OLEObject.
  2. Non-visual standard class user objects must be defined in a PowerBuilder painter. They can be dynamically created (for example, by using the CREATE statement).
  3. If a non-visual object is a local variable, the Destructor event in the non-visual object cannot be triggered unless there is a Destroy statement for the non-visual object as well.

- For custom class user objects:

  1. Non-visual custom class user objects must be defined in PowerBuilder painter. They can be dynamically created (for example, by using the CREATE statement).

  2. The specification of EAServer Project properties is unsupported.

  3. If a non-visual object is a local variable, the Destructor event in the non-visual object cannot be triggered unless there is a Destroy statement for the non-visual object as well.

- For standard and custom visual user objects:

  1. Must be defined in PowerBuilder painter.

  2. The SetFocus function is not supported for custom visual user objects, but is supported for standard visual user objects.

  3. Standard Visual Object is an extension of the visual system object (control), and it is used to customize the function of the visual system object (control). For more details, please refer to System Objects and Controls.

Supported

- Custom class user objects
- Custom visual user objects
- Standard class user objects
- Standard visual user objects

Unsupported

1. External visual user objects

   In the PowerBuilder application, the Destructor event sequence for a user object will be triggered in accordance with the Control[] property of the user object. In the mobile application, the Destructor event sequence is unsupported.

2. Nonvisual objects (Custom Class Objects and Standard Class Objects)

   To insert nonvisual object(s) between objects (window, user object, NVO, application), you can select any items on the **Insert** | **Object** menu of the PowerBuilder painter. However, Appeon does not support this.

5.1.7.2 Autoinstantiated NVO

- Declaring an autoinstantiated NVO

  1. Declaring an autoinstantiated user object creates an instance of that object (just like a structure), and the Constructor events are triggered for the instance variables.

2. If an instance variable contains an autoinstantiated NVO(b) and the Constructor event is triggered for the instance variable, an instance of NVO(b) is automatically created, and the Constructor events are triggered for the instance variables of NVO(b).

- Assignment for autoinstantiated NVO

1. When an autoinstantiated object is assigned to another autoinstantiated object, the whole object is copied to the second variable.

   For example:

```
n_cst_string lnv_string1, lnv_string2
lnv_string2 = lnv_string1      //lnv_string2 is a copy of
lnv_string 1
```

2. Assigning a NonVisualObject object to an autoinstantiated NVO or a NonVisualObject object is unsupported. Note that NonVisualObject is a system object and it is different from an NVO (non visual user object).

   For example, the following script is unsupported:

```
NonVisualObject lnv_test   //lnv_test is a NonVisualObject object
n_cst_string lnv_string   //n_cst_string is an autoinstantiated NVO
lnv_test = lnv_string //unsupported
```

- Defining autoinstantiated NVO

  The following can be included in the definition of an autoinstantiated NVO:

1. Instance variable. The instance variable can be an autoinstantiated NVO, an object, or have the same name as a window instance variable.

2. System function or user defined function or object function.

3. Constructor event, or object event or user-defined event.

4. Using a Destructor event in the definition of an autoinstantiated NVO is unsupported.

- Autoinstantiated NVO array

1. If the autoinstantiated NVO array is a fixed-size array and the array is declared, instances of each NVO are created, the instance variables of each NVO are instantiated, and the Constructor event is triggered for each instance variable.

   For example:

```
n_cst_string lnv_string[10]
```

2. If the autoinstantiated NVO array is variable-size array, the NVO instances are not created when the array is declared. When an array element is named (an NVO), the instances of the element and the foregoing elements are created, the instance variables of each NVO are instantiated, and the Constructor event is triggered for each instance variable.

   For example:

```
n_cst_string lnv_string[]
lnv_string[10].is_source = ls_model
```

- Autoinstantiated NVO as a structure member

  When the structure is declared, an instance of the autoinstantiated NVO is created. When the structure is called, the Constructor event is not triggered for the NVO. In PowerBuilder, the Constructor event is triggered when the NVO is first used.

- Inheritance

  Inheritance is supported if the ancestor of an autoinstantiated NVO is a nonautoinstantiated NVO.

5.1.7.3 Nonautoinstantiated NVO

- Declaring a non-autoinstantiated NVO

  1. To use a non-autoinstantiated NVO, you will have to declare a variable of the user object type and create an instance of it using the CREATE statement. Declaring an object variable declares an object reference.

     For example:

     ```
     n_base lnv_base     //n_base is a nonautoinstantiated NVO
     lnv_base = Create n_base    //Create an instance of n_base
     ```

     Note: PowerBuilder also supports using a non-autoinstantiated NVO by directly placing the non-autoinstantiated NVO in a window or user object (using the Insert menu or the drag-and-drop technique so it can be listed in Non-Visual Object List view), however, the instance created by this method is unsupported by Appeon.

  2. When the object instance is created, the instance variables of the NVO are instantiated, and the Constructor event is triggered for each instance variable.

  3. Instantiating an ancestor variable with an instance of one of its descendants is supported.

     For example:

     ```
     n_base lnv_base   //n_base is a nonautoinstantiated NVO
     lnv_base = Create using "n_cst_sqlspy" //n_cst_sqlspy is a descendant of
      n_base
     ```

- Assignment for nonautoinstantiated NVO

  1. When a non-autoinstantiated object is assigned to another non-autoinstantiated object, a reference to the object instance is copied. Only one copy of the object exists.

     For example:

     ```
     n_cst_string lnv_string1, lnv_string2
     lnv_string2 = lnv_string1  //Both point to same object instance
     ```

2. Unlike autoinstantiated NVOs, assigning a NonVisualObject object to a non-autoinstantiated NVO or assign a non-autoinstantiated NVO to a NonVisualObject object is supported.

   For example, the following script is supported:

```
NonVisualObject lnv_test //lnv_test is a NonVisualObject object
n_cst_string lnv_string2 //n_cst_string is a non-autoinstantiated NVO
lnv_test = lnv_string2   //supported
```

- Defining non-autoinstantiated NVOs

  The following can be included in the definition of a non-autoinstantiated NVO:

  1. Instance variables. An instance variable can be an autoinstantiated NVO, an object, or have the same name as a window instance variable.
  2. System, user defined, or object functions.
  3. Constructor, Destructor, object, and user-defined events. The Destructor event cannot be triggered unless there is a Destroy statement for the object as well.

- Non-autoinstantiated NVO array

  There can be fixed-size or variable size non-autoinstantiated NVO arrays. When the array is declared, an instance of the object is not created. A non-autoinstantiated NVO will only be created when there is a CREATE statement for the NVO.

- Non-autoinstantiated NVO as a structure member

  1. Defining a non-autoinstantiated NVO in a structure is supported.

     For example:

```
global type str_model from structure
string s_emplid
Date ld_inputday
n_cst_base lnv_base
end type
```

  2. When the structure is declared, an instance of the non-autoinstantiated NVO is not created. A non-autoinstantiated NVO will only be created when there is a CREATE statement for the NVO.

5.1.8 Calling Functions and Events

5.1.8.1 Syntax for calling functions and events

Supported

- The syntax used to call all PowerBuilder functions and events:

```
{objectname.} {type} {calltype} {when} name ({argumentlist})
```

  If the *calltype* argument is DYNAMIC, it is unsupported to specify a reference argument in the *argumentlist*.

- The syntax used to call functions and events in an object's ancestor:

```
{objectname.} ancestorclass ::{type} {when} name ({argumentlist})
```

- If the function name is not qualified with an object or a control, PowerBuilder searches for the function and executes the first one it finds that matches the name and arguments. This is supported in Appeon.

Unsupported

- Referring to a global function by using the global scope operator (::) before the function name is unsupported.

5.1.8.2 Triggering & Posting

Table 5.9:

Triggering	**Supported**
	• Triggering for functions • Triggering for events
	Unsupported
	For application and message objects, triggering for functions and events are unsupported.
Posting	**Supported**

	• Posting for functions
	• Posting for events
	• Posting function B that is called inside function A. For example:
	`Function A ()`
	`{`
	`......`
	`Post Function B () //unsupported to post function B`
	`......`
	`}`

	Unsupported
	Posting a function containing reference arguments, which is a local variable is unsupported. Please use the instance variable to replace the local variable to work around this unsupported feature.
Post function	**Supported**
	There are three POST syntax supported, and two of them are supported with limitations. • Post Close(window) • Post Open(window) Limitations: the window argument cannot be an array variable. For example, the following script is unsupported:

```
//Unsupported
window winname[2]
.....
Post open(winname[1],....)
- Post open(windowvariable)
```

- Post user_function()

  Limitations: The reference argument cannot be a local variable. For example, the following script is unsupported:

```
//Unsupported
Integer gf_string (ref string as_parm1)
Post gf_String(ls_Parm) // ls_parm is a local variable.
```

5.1.8.3 Static & dynamic calls

Supported

- Static calls to functions
- Static calls to events
- Dynamic calls to functions
- Dynamic calls to events

Unsupported

- Dynamic calling for overloaded functions is unsupported.
- Dynamically calling a function that has an argument passed by reference is unsupported.
- If a function is dynamically called, its return value cannot be passed as an argument of another function.
- Nested call of more than one layer dynamic code is unsupported, for example,

```
ll_row2 = invo_test.dynamic of_dynamic1(invo_test.dynamic of_dynamic2(ll_row))
```

  The workaround is to execute the dynamic nested call separately. The above example should be modified as below:

```
tt = invo_test.dynamic of_dynamic2(ll_row)
ll_row2 = invo_test.dynamic of_dynamic1(tt);
```

5.1.8.4 Overloading, overriding, and extending functions and events

Supported

- Function overriding is supported.
- Extending and overriding events are supported.

Unsupported

- Overloading system functions is unsupported.

- Dynamic calling for overloaded functions is unsupported.
- Overloading a function that has a dot notation as an argument is unsupported. For example, overloading the following function is unsupported:

```
wf_getname(dw_1.object.s_id[1])
```

- Using the local variable AncestorReturnValue in an event of a descendant object is unsupported, unless the event of the descendant object is an extended event from the ancestor object.
- The following scenario is unsupported:

  In object A (parent object), function g() calls function f(type1 arg 1).

```
g()
{
f(type1 arg1);
}
```

  In object B (child object), function f(type2 arg2) is the overloading function of function f(type1 arg 1), and object B inherits function g() from object A.

- Object type of passed parameter must exactly match with the declaration of function overloading. For example, in the following overloading function, the object type of the third parameter is **n_tr**:

```
public function integer of_register (string as_id, string as_dwobjectname, n_tr
 atr_obj, boolean ab_initialload)
public function integer of_register (string as_id, string as_dwobjectname, n_tr
 atr_obj, any aa_args[20])
public function integer of_register (string as_id, string as_dwobjectname, n_tr
 atr_obj, any aa_args[20], boolean ab_initialload)
```

  In the following script that calls the above function, if the third parameter *sqlca* is not **n_tr**, for example, it is an ancestor of n_tr or a descendant of n_tr, Appeon might call the wrong function.

```
gnv_app.inv_dwcache.of_register('inventory_header','d_inventory_data', sqlca,
 la_args)
```

5.1.8.5 Passing arguments to functions and events

Passing arguments

There are three ways to pass arguments to functions and events:

- By value
- By reference
- Read-only

Arguments can be passed with one **limitation** that each function or event can have a maximum of 20 arguments. If the number of arguments exceeds 20, the arguments after the 20th argument will be invalid.

Unsupported

- If both function A and function B have an argument passed by reference,calling function A that has one argument calling to function B, while the argument (that is passed by reference) in the two functions uses the same variable, is unsupported.

  For example:

  Supported syntax:

  ```
  f(int a, ref int b); g(ref int a)
  ```

  Unsupported syntax:

  ```
  f(g(a), a)
  ```

- Function A has two arguments passed by reference. It is unsupported for the two arguments to use the same variable.

  For example:

  Unsupported syntax:

  ```
  f(a,a) //f(ref int a, ref int b)
  ```

- Passing a property dot notation as the function argument is unsupported if the property refers to an object, however, this can be worked around.

  For example:

  Unsupported syntax:

  ```
  lvn_security.Of_setmenuright(this.MENUID)
  ```

  Workaround:

  ```
  menu m_1 = this.MENUID
  lvn_security.Of_setmenuright(m_1)
  ```

- Passing an argument that is an object property by reference is unsupported.

  Example:

  Unsupported example:

  ```
  /*Define a function of_display()*/
  public Function string of_display(ref string str_data)
  ...... //The code in the function
  return str_data
  end function
  /*Call to the function in the Clicked event of a CommandButton control*/
  string ls_string1
  ls_string1 = of_display(this.text)
  ```

5.1.8.6 Using return values of functions and events

Supported

To use the return value, assign it to a variable of the appropriate data type or call the function where you can use a value of that data type:

- Return values for built-in PowerScript functions
- User-defined functions or events that have return values

- Return values for system events
- User-defined events that have return values
- The function has parameters of standard data type passed by reference and the return value is used as a condition in RETURN, IF ... THEN, CHOOSE...ASE, or DO ... LOOP statements.
- The function has parameters of object data type passed by value and the return value is used as a condition in RETURN, IF ... THEN, CHOOSE...ASE, or DO ... LOOP statements.
- The return value of one function is used as the parameter of another function, for example, func1(func2()).

To use cascaded call and return values:

- It is supported to get/set the property of an object that is the return value of a function:

  Syntax:

  ```
  function.property
  ```

  For example:

  ```
  ParentWindow( ).Enabled = TRUE
  ```

- It is supported to call the function of an object that is the return value of a function.

  Syntax:

  ```
  function1.function2
  ```

  For example:

  ```
  ParentWindow( ).Hide( )
  Ls_test = String(m_main.GetParent( ).ClassName( ))
  ```

Limitations of using cascaded call and return values:

- It is unsupported to use the DYNAMIC keyword
- Except for the first call in the chain of cascaded calls, it is unsupported to use reference arguments.

5.1.9 Document Interface

Important Requirements

The following are limitations for using MDI and SDI:

- When a sheet window is open within MDI, the toolbar of the sheet window will be added as a whole new row below the toolbar of the MDI window. (This is more limited than in PowerBuilder, where you can choose for the sheet toolbar to be added after the MDI toolbar, on the left/right of the screen, to be floating, etc.)
- SDI can have only one menu and one toolbar.

Supported

- Both MDI and SDI are supported, and both multiple MDI windows and multiple MDI frames are supported.
- An MDI window can have its menu and toolbar, and every sheet window can have its own menu and toolbar, exactly like in PowerBuilder.
- When a sheet window is opened within MDI, the menu of the sheet window will replace the menu of the MDI window. (This is called a menu switch, just as it is in PowerBuilder).
- Appending the names of open sheets (Window list) to a menu item is supported.

5.2 PowerScript statements

Supported

The following table shows the supported PowerScript statements with examples:

Table 5.10:

Statement	Examples
Assignment	`a = b + 2` Note: There must not be any space between the following operators: ++, --, +=, -=, *=, /=, ^=.

CALL	CALL *ancestorobject* {*controlname*}::*event*
	Call super::*eventname*
	Example:
	`Call super::clicked`
	Note: It is supported to use the local variable AncestorReturnValue in an event of a descendant object, if the AncestorReturnValue is generated in a Call Super statement.
	Call *windowname*::*eventname*
	Example:
	`Call w_parent::ue_ok`
	Call *windowname Controlname*::*eventname*
	Example:
	`Call w_parent dw_1::ue_retrieve`

CHOOSE...C	`CHOOSE CASE testexpression`
	`CASE expressionlist`
	`statementblock`
	`{ CASE expressionlist`
	`statementblock`
	`. . .`
	`CASE expressionlist`
	`statementblock }`
	`CASE ELSE`
	`statementblock }`
	`END CHOOSE`

	Notes: Expressionlist can be one of the following expressions: 1) A single value 2) A list of values separated by commas (such as 2, 4, 6, 8) 3) A TO clause (such as 1 TO 30) 4) IS followed by a relational operator and comparison value (such as IS>5) 5) Functions 6) Any combination of the above with an implied OR between expressions (such as 1, 3, 5, 7, 9, 27 TO 33, IS >42)

CONTINUE	`integer A=1, B=1`
	`  DO WHILE A < 10`
	`  A ++`
	`  IF A < 3 THEN CONTINUE`
	`  B+=A`
	`  LOOP`

CREATE	CREATE
	Support creating object instances for all objects except for PowerObject object, GraphicObject object, WindowObject object, DragObject object, DrawObject object, Function_object object and SystemFunctions object.
	CREATE USING
	Support dynamically creating object instances except for:
	1) Dynamically creating PowerObject object, GraphicObject object, WindowObject object, DragObject object, DrawObject object, Function_object object and SystemFunctions object.
	Example:
	`UserObject luo_1`
	`luo_1 = create using "PowerObject"`
	2) Dynamically creating Transaction object.
	Example:
	`lds_main = Create using "Transaction"`
	3) Dynamically creating object instances for nested objects.
	Example:
	`w_main cb_1 lcb`
	`lcb = Create using w_main cb_ 1`

DESTROY	DESTROY DBTrans Supported: 1. The Destroy statement in non-visual system objects (DataStore, DynamicStagingArea, and Transaction Object) and non_visual user objects is supported.

	Example:
	`Destroy lnv_string // lnv_string = create n_cst_string`
	2. The Destroy statement in visual controls and visual user objects is supported.
	Example:
	`commandbutton lcb_1`
	`lcb_1 = create using "cb_2"`
	`Destroy lcb_1`
	Note: As one of the best development practices, it is strongly recommended that you use DESTROY statement.

DO...LOOP	Four formats of Do...Loop:
	Do...Until
	`DO UNTIL a > 15`
	`  a = (a + 1) * b`
	`LOOP`
	Do...While
	`Integer a = 1, b = 1`
	`DO WHILE a <= 15`
	`  a = (a + 1) * b`
	`LOOP`
	Loop...Until
	`Integer a = 1, b = 1`
	`DO`
	` a = (a + 1) * b`
	`LOOP UNTIL a > 15`
	Loop...While
	`Integer a = 1, b = 1`
	`DO`
	` a = (a + 1) * b`
	`LOOP WHILE a <= 15`
	Nesting of Do...Loop statement.
	Example:
	`Int li_array[100,50,200]`
	`FOR i = 1 to 100`
	` FOR j = 1 to 50`
	`  FOR k = 1 to 200`
	`   ll_array[i,j,k]= i + j + k`
	`  NEXT`
	` NEXT`
	`NEXT`
	Nesting of Do...Loop statement and For...Next statement. Example:
	`FOR ll_i = 5 to 25`
	`DO UNTIL ll_j > 15`
	` ll_j ++`

<table>
<tr><td></td><td>

```
LOOP
 ll_j = 1
NEXT
```

</td></tr>
<tr><td>EXIT</td><td>

```
DO WHILE a < 10
 a ++
 IF a > 3 THEN
 EXIT
  b += a
LOOP
```

</td></tr>
<tr><td>FOR NEXT</td><td>

```
Integer a=1
Integer start, end, increment
For n=start TO end STEP increment
a*=n Next
```

1) End the FOR loop with the keywords END FOR instead of NEXT.

Example:

```
FOR ll_i = 5 to 25
ll_j = ll_j+10
END FOR
```

2) Using a positive or negative variable for the step increment.

Example:

```
FOR N = 5 TO 25 STEP 5
A = A+10
NEXT
```

3) Nesting of the For...Next statements or For ... Next statement with Do ... Loop statement.

Example:

```
Int li_array[100,50,200]
FOR i = 1 to 100
 FOR j = 1 to 50
  FOR k = 1 to 200
   ll_array[i,j,k]= i + j + k
  NEXT
 NEXT
NEXT
```

</td></tr>
<tr><td>HALT</td><td>

```
IF sle_password.Text <> CorrectPassword
THEN HALT CLOSE
```

Notes:

1. The code following the Halt statement will not be executed in Appeon Mobile. For example, in the following script, "close(parent)" will be ignored in the Appeon conversion process.

   ```
   Halt //supported
   Close(parent) //this will be ignored
   ```

2. The reserved word HALT is supported.

3. If HALT CLOSE statement is invoked in a nested call, the mobile application will not be closed immediately at the execution of the statement, instead it will be closed after the nest call is executed.

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</table>

IF...THEN	`IF num >= 1 THEN result = 1 ELSE result = 0`
	`IF num >= 1 THEN`
	`result = 1`
	`ELSEIF num <= -1 THEN`
	`result = -1`
	`ELSE`
	`result = 0`
	`END IF`

RETURN	`RETURN 0`

Unsupported

The following statements are unsupported:

- GOTO
- THROW
- THROWS
- TRY...CATCH...FINALLY...END TRY

5.3 Using PowerBuilder Source Editor

A script that is manually added in the Edit Source window will not be converted to mobile. For example, the following script that follows "on w_1.create"; in the Edit Source window will have no effect: Messagebox ("Welcome","Welcome to Appeon!").

For a descendant object, it is unsupported to declare the event of its ancestor object in the Edit Source window.

6 Embedded SQL

6.1 Database server and data types

Supported

The supported database servers and data types are listed in the table below:

Table 6.1:

MS SQL Server	**Supported**		
	binary*	bit	bigint
	char	datetime	decimal
	float	int	image*
	money	nchar	numeric
	ntext	nvarchar	real
	small datetime	small money	smallint
	sql_variant	text	tinyint
	timestamp	uniqueidentifier	varbinary*
	varchar		
	You can only use the default value for the user_quoted_identifier property.		
	Unsupported		
	The data types that are marked with a "*" symbol can only be used in SELECTBLOB and UPDATEBLOB SQL statements. binary & varbinary In the mobile application, the data length of the two types can exceed 255 digits. Digits that exceed 255 can either be read from or updated to the database by SELECTBLOB or UPDATEBLOB statement.		
Sybase ASE Server	**Supported**		
	binary	bit	char
	date	datetime	decimal
	float	Image	int
	money	nchar	nvarchar
	numeric	real	smalldatetime
	smallint	smallmoney	text
	timestamp	tinyint	varbinary
	varchar		
	Unsupported		
	In a column, data of timestamp type cannot be displayed correctly. Timestamp data type is unsupported when dynamically creating DataWindows.		

Sybase ASA/SQL Anywhere Server	**Supported**		
	binary*	bit	bigint
	char	date	decimal
	double	float	integer
	long_binary*	long_varchar	money
	numeric	smallint	smallmoney
	time	timestamp	tinyint
	unsigned_bigint	unsigned_int	unsigned_smallint
	varbinary*	varchar	
	Unsupported		
	The data types that are marked with a "*" symbol can only be used in SELECTBLOB and UPDATEBLOB SQL statements.		
Oracle Server	**Supported**		
	blob *	char	character
	clob*	date	dec
	decimal	float	integer
	interval_day_to_second	interval_year_to_month	long
	nchar	nvarchar2	number
	numeric	raw*	real
	ref cursor	rowid*	timestamp
	timestampwithtimezone	timestampwithlocal timezone	urowid*
	varchar	varchar2	
	Unsupported		
	The data types that are marked with a "*" symbol can only be used in SELECTBLOB and UPDATEBLOB SQL statements.		
IBM DB2 Server	**Supported**		
	bigint	blob*	char
	clob*	date	dbclob*
	decimal	double	graphic
	integer	real	smallint
	time	timestamp	varchar
	vargraphic		
	Unsupported		
	The data types that are marked with a "*" symbol can only be used in SELECTBLOB and UPDATEBLOB SQL statements. Use Double variables instead of Real variables when obtaining float data from the database.		

Sybase IQ	**Supported**		
	bigint	binary*	blob*
	char	clob	date
	datetime	decimal	float
	hs_blockmapidentity*	hs_vdoidentity*	hs_vdorecid*
	image	int	long_binary*
	long_varchar	money	numeric
	oldbit	real	rowid
	smalldatetime	smallint	sysname
	time	timestamp	text
	tinyint	uniqueidentifier*	uniqueidentifierstr
	unsigned bigint	unsigned int	unsigned smallint
	varbinary*	varchar	xact_id
	xml		
	Unsupported		
	The data types that are marked with a "*" symbol can only be used in SELECTBLOB and UPDATEBLOB SQL statements.		
Informix	**Supported**		
	blob*	boolean	byte*
	char	clob*	date
	datetime	decimal	float
	int8	integer	interval
	lvarchar	money	nchar
	nvarchar	real	serial
	serial8	smallint	text
	time	varchar	
	Unsupported		
	The data types that are marked with a "*" symbol can only be used in SELECTBLOB and UPDATEBLOB SQL statements. (* .NET only) The NumericScale attribute is unsupported.		

6.2 Operators

Supported

The following are the SQL operators that can be used:

Table 6.2:

=	<	>	<=	>=	<>	between	exists

in	like	not between	not exists	not in	not like	is	is not
=all	!=all	<all	>all	<=all	>=all	=any	!=any
<any	>any	<=any	>=any	!=any	|	~	

Note: Concatenation operator (+) for String datatype is supported.

Unsupported

"^" is unsupported.

6.3 Transaction management statements

Supported

Table 6.3:

Statement	Examples
COMMIT	Commit
CONNECT	Connect
DISCONNECT	Disconnect
RollBack	Rollback
Savepoint *	Note: this statement is only supported in Oracle database.

6.4 Non-cursor statements

Requirements

1. For SQL Server database, Appeon Server cannot recognize SQL statements with double quotation marks if the SET QUOTED_IDENTIFIER is OFF.

2. For SQL Server and ASE database with JDBC driver, use "SET NOCOUNT ON" before the calls to SQL statements when you create a trigger object. Otherwise, update to the database on mobile may fail with an error "Failed to update database due to java.sql.SQLException...cannot insert the value NULL.".

3. In SQL statements, if table names and column names are in double quotation mark, string constant should be quoted as single quotation marks.

Supported

Appeon currently supports six types of non-cursor SQL statements:

Table 6.4:

DELETE	INSERT	SELECT
SELECTBLOB	UPDATE	UPDATEBLOB

The following table provides more information for supported non-cursor SQL statements:

Table 6.5:

Type	Supported	Details

SELECT	Retrieval list (SELECT clause)	The retrieval list can be column names, IDs, or aliases. The column names can be expressed as characters (for example, "empid") or as dot notation (for example, emp.empid).
		Example:
		`select s_emplid,`
		`s_emplname //Column names`
		`select e.emp_lname //Table`
		`aliases`
		`select s_emplid + s_emplname as`
		`emplinfo //Column (expression)`
		`aliases`
		The retrieval list can be expressions that are functions, sub queries, arithmetic operators or any combination of columns, constants, and expressions.
		Example:
		`select s_emplid + s_emplname as`
		`emplinfo //Concatenation of`
		`strings`
		`select substring(s_emplid +`
		`s_emplname,1,3) as`
		`emplinfo,getdate() //Function`
		`expression`
		`select f_salary / 12 as`
		`f_persalary //Operation`
		`expression`
		The retrieval list can be an asterisk that represents all columns in one table.
		Example:
		`select * //Asterisk symbol representing all columns`
		Mobile Enhancement: It is supported to use variable in the Select statement. For example, the following syntax is supported on mobile:
		`string ls_colname="emp_name"`
		`string ls_value`
		`select :ls_colname`
		`into:ls_value from t_employee`
		`where id = 1;`

	FROM clause	The FROM clause can contain a single table (view) or multiple tables (views). The table can be expressed using table name or table alias.
		Example:
		`from Employee, viewbonus`
		`from Employee a, viewbonus b`

		The tables can be locked or unlocked.
	WHERE clause	The WHERE clause can contain any of the following: • Retrieval parameters • Standard comparison operators (=, >, <, <>, >=, <=) • Standard logical operators (NOT, AND, OR) • Special operators (UNION, BETWEEN, IN, LIKE, IS NULL) • Join conditions • Special characters ('&', '~', '[]', '!~~!', '```', '!~@~~~~!', etc.)
	HAVING clause	Supported
	GROUP BY clause	Supported
	COMPUTED clause	Supported
	FOR UPDATE clause	Supported

	Variables list (INTO statement)	The Variables list can be variable(s) or reference(s) to a control property.
		Example:
		`into: ls_emplid`
		`into: sle_1.Text`

	Example	`SELECT f1, f2, ..., fn`
		`into :v1, :v2, ..., :vn`
		`FROM table`
		`WHERE w1 = :p1 and w2`
		`= :p2.prop and/or ... and/or wn = :pn`

SELECTBLOB	SELECTBLOB INTO clause	Supported On mobile, if the result set of SELECTBLOB contains several rows, the first row is returned and the return value of SQLNRows is 1 for every supported DBMS. This is different from PowerBuilder. SelectBlob statement may return "" (empty string) on mobile when it returns NULL in PowerBuilder. The difference is caused by the JDBC driver.
	FROM clause	Supported
	WHERE clause	Supported

	Example	`Blob Emp_id_pic`
		`SELECTBLOB Emp_pic`
		`INTO:Emp_id_pic`
		`FROM Employee`
		`WHERE Employee.Emp_Num = 100`

		`USING Emp_tran;` `p_1.SetPicture(Emp_id_pic)`
INSERT	INSERT INTO clause	The INSERT INTO clause can be either table (view) name(s) or a column list.
	VALUES clause	The VALUES clause can contain any of the following: • All supported data types in allowed scope • Space, special characters ('<>', '!', '@', '#', '$', '%', '^', '&', '*') • Initial value, a single record, multiple records (up to 500)
	Validation	The validation will be automatically done by the system.
	Example	`INSERT INTO table` `VALUES("v1", 12.3, :p1, :p2, ..., :pn)`
UPDATE	SET clause	The SET clause can update a single record or multiple records (up to 200). It can contain special characters including '<>', '!', '@', '#', '$', '%', '^', '&', '*'.

	Example	`UPDATE table`
		`SET f1 = :p1, f2 = :p2`
		`WHERE w1 = :p3 and/or ... wn`
		`= :pn`

UPDATEBLOB	WHERE clause	Supported If data is updated by UPDATEBLOB statements without a WHERE clause, on mobile all the data will be updated to the database, and the return value of SQLNRows is equal to the number of rows that you have updated. On mobile, the *BlobVariable* could be NULL.

	Example	`UPDATEBLOB Employee SET emp_pic = :Emp_id_pic`
		`WHERE Emp_num = 100`
		`USING Emp_tran ;`

DELETE	DELETE FROM clause	The FROM clause can contain a single table (view) or multiple tables (views). The table can be expressed using a table name or table alias. The DELETE statement can delete a single record or multiple records.
	WHERE clause	The WHERE clause can contain any of the following: • Retrieval parameters • Standard comparison operators (=, >, <, <>, >=, <=) • Standard logical operators (NOT, AND, OR) • Special operators (UNION, BETWEEN, IN, LIKE, IS NULL) • Join conditions

		• Special characters ('&', '~', '[]', '!~~!', '```', '!~@~~~~!', etc.)

	Example	`DELETE`
		`FROM table`
		`WHERE f1 = '1' and f2 = :p1 ...`
		`fn = :pn`

Unsupported

- Updateblob statements cannot update multiple blob columns at one time.
- It is unsupported to parenthesize SELECT statements when using EXCEPT ALL or INTERSECT in SQL statements for DB2 database.

  For example, the following script is unsupported:

```
(SELECT DEP_ID FROM PUB_T_DEPARTMENT) EXCEPT ALL (SELECT DEP_ID FROM
 PUB_T_EMPLOYEE)
(SELECT DEP_ID FROM PUB_T_DEPARTMENT) INTERSECT (SELECT DEP_ID FROM
 PUB_T_EMPLOYEE) //Unsupported
```

  The following script is supported:

```
SELECT DEP_ID FROM PUB_T_DEPARTMENT EXCEPT ALL SELECT DEP_ID FROM PUB_T_EMPLOYEE
SELECT DEP_ID FROM PUB_T_DEPARTMENT INTERSECT SELECT DEP_ID FROM
 PUB_T_EMPLOYEE //Supported
```

- If the database is Sybase ASE or SQL Server, SQL statements can contain column name(s) enclosed in double quotes (same as in PowerBuilder). If the database is not Sybase ASE or SQL Server, SQL statements cannot contain column name(s) enclosed in double quotes (same as in PowerBuilder).
- Using a COMPUTE BY clause in the SELECT statement is unsupported if an application uses a JDBC driver.

6.5 Cursor statements

Supported

- The following statements for retrieving and updating cursors are supported:

  Table 6.6:

CLOSE	DECLARE	DELETE	FETCH
FETCH FIRST	FETCH LAST	FETCH NEXT	FETCH PRIOR
OPEN	UPDATE		

- Local cursors are supported.
- Global and instance cursors are supported.

Unsupported

- The Cursor SQL statement UPDATE Where Current is unsupported.

  Syntax:

```
UPDATE TableName SetStatement WHERE CURRENT OF CursorName;
```

- The Cursor SQL Statement DELETE Where Current is unsupported.

  Syntax:

```
DELETE FROM TableName WHERE CURRENT OF CursorName;
```

- If a cursor is declared for retrieving rows from a table, modifying (inserting, deleting, or updating) the table during the cursor open close period is unsupported . Otherwise, the data retrieved is different in the mobile application than in the PowerBuilder application.

  Example:

```
DECLARE cur_empl CURSOR FOR select s_emplid, s_emplname from employee;
OPEN cur_empl;
INSERT INTO employee (s_emplid, s_emplname) VALUES (:ls_addid, :ls_addname);
FETCH cur_empl INTO :ls_emplid, :ls_emplname;
DO WHILE sqlca.sqlcode=0
FETCH cur_empl INTO :ls_emplid, :ls_emplname;
LOOP
CLOSE cur_empl;
Commit;
```

- Placing the cursor declaration syntax in a statement block that may not be executed at runtime is unsupported. In PowerBuilder, cursor declaration syntax is treated the same way as variable declaration, so the syntax will not be skipped although the statement block is not executed. However, in the mobile application, the syntax may be skipped and cause errors.

  Example:

```
if li_lenth = 10 then
DECLARE cur_empl CURSOR FOR select s_emplid, s_emplname from employee;
......
End if
OPEN cur_empl;
FETCH cur_empl INTO :ls_emplid, :ls_emplname;
......
```

  In the mobile application with the above syntax, if the li_length is not 10, the cursor declaration syntax cannot be read, and errors occur.

6.6 Database stored procedures

Table 6.7:

SQL statements	**Supported**
	The following statements are supported:
	• DECLARE
	`DECLARE lproc_1 PROCEDURE FOR StoreProcedure @f1 = :p1 IN, @f2 = :p2 OUT, ... @fn = :pn USING trans_obj;`
	• EXECUTE
	`EXECUTE lproc_1;`

	• FETCH
	`FETCH lproc_1 INTO :v1, :v2, :v3, ...;`
	• FETCH FIRST
	`FETCH FIRST lcur_1 INTO :v1, :v2, :v3, ...;`
	• FETCH LAST
	`FETCH LAST lcur_1 INTO :v1, :v2, :v3, ...;`
	• FETCH NEXT
	`FETCH NEXT lcur_1 INTO :v1, :v2, :v3, ...;`
	• FETCH PRIOR
	`FETCH PRIOR lcur_1 INTO :v1, :v2, :v3, ...;`
	• CLOSE
	`CLOSE lproc_1;`
	Notes:
	Input & output parameters are supported, except that the output parameter for a stored procedure that performs DataWindow update is unsupported.
	Return value for stored procedure is supported.

Declaration syntax	**All supported, except the following ...**
	Placing the stored procedure declaration syntax in a statement block that may not be executed at runtime is unsupported. In PowerBuilder, stored procedure declaration syntax is treated the same way as variable declaration, so the syntax will not be skipped although the statement block is not executed. However, in the mobile application, the syntax may be skipped and cause errors.
	For example:
	`if li_length = 10 then`
	`DECLARE proc_empl PROCEDURE FOR dbo.java_debug_request`
	`debugger = a1,`
	`request = a2,`
	`out_request = a3 ;`
	`...`
	`End if`
	`OPEN proc_empl;`
	`FETCH proc_empl INTO :ls_emplid;`
	`...`
	In the mobile application with the above syntax, if the li_length is not 10, the cursor declaration syntax cannot be read, and errors occur.

Arguments of stored procedures	**Supported**

	Input, output & inout parameters is supported. The data type of the parameters should match the corresponding data type in database when you declare a stored procedure. Multiple result sets for a stored procedure are supported.

User-defined data types	**Unsupported**
	For the Appeon .NET edition, you can work around for SQL Server database with the following instructions.
	To use the user-defined data type of SQL Server for stored procedure, you need to take the following steps to modify the configuration file:
	1. Open the configuration file named "user2systemdbtype.config" in the <AppeonServerRootDirectory>/appeon/AEM/config directory.
	2. Add data type mappings in the section named "sqlserver". For example, if you have created a user-defined data type named "mydatetime" that is derived from the system data type "datetime", you would need to set the value of the "userdefine-type" attribute to "mydatetime" and then set the value of the "system-type" attribute to "datetime" in the section named "datatype". If you have more than one user-defined data type, you should add all of them to the configuration file, as shown in the example below.
	`<database name="sqlserver">`
	`  <datatype userdefine-type="mydatetime" system-type="datetime" />`
	`  <datatype userdefine-type="myvarchar" system-type="varchar" />`
	`</database>`
	3. Restart IIS after you make changes to the configuration file.

Calling stored procedures	**Supported** Appeon provides nearly full support for calling stored procedures, except for the following requirements and unsupported features.

	Requirements (For Informix database)
	The sequence of input parameters must stay the same as that in the Informix database.
	For example:
	`Create procedure ProcName(Variable1 int,Variable2 varchar(10), ...)`
	`return varchar(10)`
	`End procedure ProcName`
	`Call ProcName(10,"Appeon", ...)`

	Unsupported • Appeon does not support using an expression as a parameter for calling the stored procedure. • Appeon does not support using default values for parameters in an Oracle stored procedure.

	• Appeon does not support calling an ASA/SQL Anywhere stored procedure with output arguments. • Appeon does not support calling an overloading stored procedure. • **(.NET only)** If the parameter is null, dynamically calling stored procedure in Informix is unsupported. • Offline feature does not support calling stored procedures, because UltraLite and SQLite databases do not support stored procedures.

6.7 Dynamic SQL

Supported

- Dynamic SQL Format 1: executing a SQL statement does not produce a result set and does not require input parameters.

  Example code:

```
EXECUTE IMMEDIATE :strSQL USING trans_obj;
/*Executing a SQL statement does not produce a result set and
does not require input parameters*/
```

  Notes:

  1. In EXECUTE IMMEDIATE SQL statement, if the number of fetched row(s) is 0, the SQLCODE in the transaction object is 0 in PowerBuilder while it is 100 in Appeon.
  2. Using the syntax EXECUTE IMMEDIATE "set transaction isolation level n" is unsupported.
  3. (.NET* only) Input parameters are unsupported.

- Dynamic SQL Format 2: executing a SQL statement that does not produce a result set but does require input parameters.

  Example code:

```
INT emp_id = 56
String fname = "jack";
PREPARE sqlsa FROM "Delete From employee Where emp_id=? And fname=?"
EXECUTE sqlsa USING :emp_id, :fname;
/*Executing a SQL statement that does not produce a result set
but does require input parameters*/
```

- Dynamic SQL Format 3: Use this format to execute a SQL statement that produces a result set in which the input parameters and result set columns are known at compile time.

  Example code:

```
DECLARE Cursor | Procedure DYNAMIC CURSOR | PROCEDURE
FOR DynamicStagingArea ;
PREPARE DynamicStagingArea FROM SQLStatement {USING TransactionObject} ;
OPEN DYNAMIC Cursor {USING ParameterList} ;
EXECUTE DYNAMIC Procedure {USING ParameterList} ;
FETCH Cursor | Procedure INTO HostVariableList ;
```

```
CLOSE Cursor | Procedure ;
/*Use this format to execute a SQL statement that
produces a result set in which the input parameters
and result set columns are known at compile time*/
```

Note: The default Transaction object name SQLCA is supported.

- Dynamic SQL Format 4: executing a SQL statement that produces a result set in which the number of input parameters, result set columns, or both, are unknown at compile time.

  Example code:

```
DECLARE Cursor | Procedure DYNAMIC CURSOR | PROCEDURE
FOR DynamicStagingArea ;
PREPARE DynamicStagingArea FROM SQLStatement { USING TransactionObject} ;
DESCRIBE DynamicStagingArea INTO DynamicDescriptionArea ;
OPEN DYNAMIC Cursor | Procedure USING DESCRIPTOR DynamicDescriptionArea ;
EXECUTE DYNAMIC Cursor | Procedure USING DESCRIPTOR DynamicDescriptionArea ;
FETCH Cursor | Procedure USING DESCRIPTOR DynamicDescriptionArea ;
CLOSE Cursor | Procedure ;
/ *Use this format to execute a SQL statement that
produces a result set in which the input parameters
and result set columns are unknown at compile time*/
```

  Notes:

  1. MERGE statement is supported.
  2. The default transaction object name SQLDA is supported.
  3. If you need a DynamicStagingArea variable other than SQLSA, you must declare it and instantiate it with the CREATE statement before using it.
  4. (.NET only) Because of the .NET driver for Informix, the mobile application differs from PowerBuilder application in the following aspect:
     a. The Time data type will be returned as DateTime on mobile.
     b. The Money and Float data type will be returned as Decimal data type.
  5. In Appeon for PowerBuilder, when executing a dynamic embedded SQL in Dynamic SQL Format 4 (example code as shown below), ASE database cannot get the output parameters from the stored procedure.

     This problem is caused by ASE database driver. If there are similar codes described below causing problems in ASE database, please turn to relevant technicians of Sybase for support.

```
String ls_execute_sql = 'begin transaction apb ' + '~r~n' +&
'declare @myparm numeric(4) ' + '~r~n' +&
'exec appeon_inout @parin = 4, @parout = @myparm output' + '~r~n' +&
'SELECT @myparm ' + '~r~n' +&
'commit transaction apb '
prepare sqlsa from :ls_execute_sql using sqlca;
describe sqlsa into sqlda;
DECLARE my_cursor DYNAMIC procedure FOR SQLSA ;
execute DYNAMIC my_cursor using descriptor sqlda ;
if sqlca.sqlcode < 0 then
messagebox('1',sqlca.sqlerrtext)
```

```
end if
         FETCH my_cursor using descriptor sqlda ;
         if sqlca.sqlcode < 0 then
           messagebox('2',sqlca.sqlerrtext)
else
ls_Value = String(SQLDA.GetDynamicNumber(1))
If IsNull(ls_Value) Then
ls_value = 'Null'
ElseIf ls_value = '' then
ElseIf ls_value = '' then
ls_value = "Empty string('')"
End If
messagebox('3',ls_Value)
end if
close my_cursor;
```

Difference

- Calling Fetch Prior when the cursor position is on the first row or calling Fetch Next when the cursor position is on the last row returns a different sqldbcode than in PowerBuilder and on mobile.
- It is suggested to use "colname is null" instead of "colname = null".

7 Functions

7.1 System functions

Supported

The following are the categories with some or all of their functions supported:

Table 7.1:

Array Functions	Blob Function	Data Type Checking and Conversion Functions
Date, Day, and Time Functions	DDE Client Functions	File Functions
International Functions	Miscellaneous Functions	Numeric Functions
String Functions	System and Environment Functions	Timing Functions
Window Functions		

Unsupported

- The following are the unsupported system function categories that do not contain any supported individual functions:

  Table 7.2:

Class Definition Functions	DDE Server Functions	Garbage Collection Functions
Help Functions	Library Functions	Printer Functions
Print Functions	Registry Functions	Shared Object Functions (SharedObject Functions)
Tracing Functions		

- Having a parent object dynamically call a system function that is overloaded by its child object is unsupported.

7.1.1 Supported functions

7.1.1.1 Array Functions

Table 7.3: Functions

Support Level	Feature Name	Coding Examples
Supported	LowerBound	Int b[-5 to 2,5],a[5],c[] li_lower=LowerBound(b,2) li_lower=LowerBound(b,1) li_lower=LowerBound(a) li_lower=LowerBound(a,1)

Support Level	Feature Name	Coding Examples
		li_lower=LowerBound(c)
Supported	UpperBound	Int b[-15 to -5,5],a[5],c[] li_upper=UpperBound(b,2) li_upper=UpperBound(b,1) li_upper=UpperBound(a) li_upper=UpperBound(a,1) li_upper=UpperBound(c)

7.1.1.2 Blob Functions

Table 7.4: Functions

Support Level	Feature Name	Coding Examples
Supported	Blob	blob lb_data = blob("convert string to blob") string ls_data lb_data = blob(ls_data)
Supported	BlobEdit	ulong ll_var blob lb_data ll_var = BlobEdit(lb_data, 1, "String") ll_var = BlobEdit(lb_data, 3, 12345) ll_var = BlobEdit(lb_data, 9, 2004-12-03) ll_var = BlobEdit(lb_data, 1, blob("blob")) Note: The data argument cannot be Any data type.
Supported	BlobMid	blob lb_data,lb_subdata lb_subdata = BlobMid(lb_data,3) lb_subdata = BlobMid(lb_data,5)
Supported	Len	long ll_len blob lb_data,lb_subdata ll_len = len(lb_data) ll_len = len(lb_subdata)
Supported	LenW	long ll_len blob lb_data,lb_subdata ll_len = LenW(lb_data) ll_len = LenW(lb_subdata)
Supported	String	blob lb_data,lb_subdata

Support Level	Feature Name	Coding Examples
		string ls_data ls_data = string(lb_data) ls_data = string(lb_subdata)

7.1.1.3 Byte Functions

Table 7.5: Functions

Support Level	Feature Name	Coding Examples
Supported	Byte	
Supported	GetByte	
Supported	GetByteArray	
Supported	SetByte	

7.1.1.4 Data Type Checking and Conversion

Table 7.6: Functions

Support Level	Feature Name	Coding Examples
Supported	Asc	li_test = Asc ('adfsd') li_test = Asc ('~nern') li_test = Asc (ls_test) li_test = Asc (wf_getstring()) //wf_getstring() is a function that has a string return value
Supported	Char	ls_test1 = Char(65) ls_test1 = Char("~n~~djfksdl")

Supported	Date	ld_test = Date (ldt_test)
		//ldt-test is a datetime variable
		ld_test = Date (now())
		ld_test = Date (ls_test)
		//ls_test is a string variable
		ld_test = Date (2003, 4, 1)
		Note: if the argument contains an invalid date, Date returns NULL in PowerBuilder, whereas in the mobile application, it returns an empty string ("").

Supported	DateTime	ldt_test = Datetime (ld_test) ldt_test = Datetime (ld_test, lt_test)

Support Level	Feature Name	Coding Examples
		Note: After conversion, the microsecond portion in the time argument will be omitted.

Supported	Dec	ldec_test = Dec ("1.234567")
		//Return the string as a decimal
		ldec_test = Dec ("1234567")
		ldec_test = Dec (dw_1.object.data[1,2])

Supported	Double	ldb_test = Double ("78.7956") //Return the string as a double
Supported	Integer	li_test = Integer ("93") //Return the string as an integer
Supported	IsDate	If IsDate ("Jan 32, 1993") = TRUE Then... //Determines whether the string is a valid date This function will validate whether the string is a date according to the regional settings of the client. For example, if the regional setting is set to United States, IsDate ("m-d-yyyy") returns True, while IsDate ("dd-mm-yyyy") and IsDate ("yyyy-mm-dd") return False; when set to United Kingdoms, IsDate ("d-m-yyyy") returns True, while IsDate ("m-d-yyyy") and IsDate ("yyyy-mm-dd") return False; when set to China, Korea, etc., IsDate ("yyyy-mm-dd") returns True, and the other formats return False.
Supported	IsNull	Integer a, b... lb_value = isnull (a+b) //If the value of expression a+b is null, the lb_value is set as True; otherwise, False
Supported	IsNumber	If IsNumber ("23.45") Then ... //Return True since the value of the string is a number Note: PowerBuilder does not support 1E123 (more than two digits after E). Functions such as IsNumber ("1E123") in PowerBuilder return FALSE, but after conversion, IsNumber returns TRUE.
Supported	IsTime	IsTime (timevalue) If IsTime ("23: 11") Then ... //hh:mmIf

Support Level	Feature Name	Coding Examples

		IsTime ("23: 11:33") Then ...
		//hh:mm:ssIf
		IsTime ("23: 11:33.123456") Then ...
		//hh:mm:ss.xxxxxx

Supported	Long	ll_test = long ("99.88")
		//Return the string as a long
		ll_test = long (16119,26930)
		//Convert the two UnsignedIntegers into a long

Unsupported	LongLong	
Supported	Real	lr_test = Real ("88.56") //Return the string as a real

Supported	String	String (data {,format})
		`ls_test = string (1993-05-17, "mm/dd/yyyy") // Convert a date to string`
		`ls_test = string (07:12:28, "hh:mm:ss") // Convert a time to string`
		`ls_test = string (44.56, "$#,##0.00") // Convert a numeric to string`
		`ls_test = string ("gf", "@*@") //Convert a string to formatted string`
		Notes:
		String (data, format) cannot be used in DataWindow property expression.
		The format argument cannot be [currency].

Supported	Time	lt_test = time ("23:00") Note: After conversion, the microsecond portion of the time will be omitted.

7.1.1.5 Date, Day, and Time Functions

Table 7.7: Functions

Support Level	Feature Name	Coding Examples
Supported	Day	li_test = Day(2003-04-01) li_test = Day(ld_today) li_test = Day(today())
Supported	DayName	ls_test = DayName(2003-04-01)

Support Level	Feature Name	Coding Examples
		ls_test = DayName(ld_today) ls_test = DayName(today())
Supported	DayNumber	li_test = DayNumber(2003-04-01) li_test = DayNumber (ld_today) li_test = DayNumber (today())
Supported	DaysAfter	ll_test = DaysAfter(2003-04-01, 2003-04-01) ll_test = DaysAfter(ld_test1, today())
Supported	Hour	Hour(time) li_test = Hour(21:00:00) li_test = Hour(lt_test) li_test = Hour(Now())
Supported	Minute	li_test = Minute (21:00:00) li_test = Minute (lt_test) li_test = Minute (Now())
Supported	Month	li_test = Month (2003-04-01) li_test = Month (ld_today) li_test = Month (today())
Supported	Now	ldt_test = Now()
Supported	RelativeDate	ld_test = RelativeDate (2003-04-01, 27) ld_test = RelativeDate (ld_test1, li_after) ld_test = RelativeDate (today(), li_after)
Supported	RelativeTime	ld_test = RelativeDate (2003-04-01, 27) ld_test = RelativeDate (ld_test1, li_after) ld_test = RelativeDate (today(), li_after)
Supported	Second	li_test = Second (21:00:00) li_test = Second (lt_test) li_test = Second (Now())
Supported	SecondsAfter	ll_test = SecondsAfter (21:00:00, 09:00:00) ll_test = SecondsAfter (lt_test1, now())
Supported	Today	ld_test = Today()
Supported	Year	li_test = Year (2003-04-01) li_test = Year (ld_today) li_test = Year (today())

7.1.1.6 DDE Client Functions & Events

Table 7.8: Functions

Support Level	Feature Name	Coding Examples
Supported	CloseChannel	CloseChannel(handle, Handle(w_sheet))
Supported	ExecRemote	
Supported	GetDataDDE	string Str20 GetDataDDE(Str20)
Supported	GetDataDDEOrigin	string WhichAppl, WhatTopic, WhatLoc GetDataDDEOrigin(WhichAppl, WhatTopic, WhatLoc)
Supported	GetRemote	
Unsupported	HotLinkAlarm	
Supported	OpenChannel	long handle handle = OpenChannel("Excel", "REGION.XLS") Note: It is recommended to determine whether the execution succeeds by its returning -1, -9 or a positive integer. Do not assume that it has failed because it returns a negative integer.
Supported	RespondRemote	IF GetDataDDE(Value) = 1 THEN RespondRemote(TRUE)
Supported	SetRemote	
Supported	StartHotLink	StartHotLink("Any", "MyPBApp", "Any")
Supported	StopHotLink	StopHotLink("Any", "MyPBApp", "Any")

7.1.1.7 File Functions

Table 7.9: File Functions

Support Level	Feature Name	Coding Examples
Unsupported	ChangeDirectory	The file directory in iOS and Android is different from that of Windows, therefore, the directory functions such as ChangeDirectory, CreateDirectory, DirectoryExists, RemoveDirectory etc. are unsupported.
Unsupported	CreateDirectory	
Unsupported	DirectoryExists	
Supported	FileClose	
Supported	FileCopy	In the iOS and Android system, only files under the same directory (the sub-folder of the application sandbox) can be copied or renamed. Reason is in

Support Level	Feature Name	Coding Examples
		the iOS and Android system, we have full read/ write rights to the sandbox of our application, but not to the others.
Supported	FileDelete	
Supported	FileEncoding	
Supported	FileExist	
Supported	FileLength	
Unsupported	FileLength64	
Unsupported	FileMove	
Supported	FileOpen	
Supported	FileRead	
Supported	FileReadEx	
Supported	FileSeek	
Unsupported	FileSeek64	
Supported	FileWrite	
Supported	FileWriteEX	
Unsupported	GetCurrentDirectory	
Unsupported	GetFileOpenName	
Unsupported	GetFileSaveName	
Unsupported	GetFolder	
Unsupported	RemoveDirectory	

7.1.1.8 International Functions

Table 7.10: Functions

Support Level	Feature Name	Coding Examples
Unsupported	FromAnsi	
Unsupported	FromUnicode	
Unsupported	IsAllArabic	
Unsupported	IsAllHebrew	
Unsupported	IsAnyArabic	
Unsupported	IsAnyHebrew	
Unsupported	IsArabic	
Unsupported	IsArabicAndNumbers	
Unsupported	IsHebrew	
Unsupported	IsHebrewAndNumbers	

Support Level	Feature Name	Coding Examples
Supported	Reverse	ls_return = Reverse(ls_test)
Unsupported	ToAnsi	
Unsupported	ToUnicode	

7.1.1.9 Miscellaneous Functions

Table 7.11: Functions

Support Level	Feature Name	Coding Examples
Supported	Beep	Beep(5)
Supported	ChooseColor	li_color = ChooseColor(red, custom [ ])
Supported	ClassName	ls_classname = ClassName(li_array) Note: If the argument is a numeric data type, the function returns number.
Supported	DebugBreak	IF IsNull(auo_ext) THEN DebugBreak()
Supported	DraggedObject	DragObject poj_ctr poj_ctr = DraggedObject()
Supported	GetFolder	integer li_result li_result = GetFolder("my targets", ls_path)
Supported	IntHigh	li_high = IntHigh(ll_value)
Supported	IntLow	li_low = IntLow(ll_value)
Supported	IsValid	IF IsValid(w_emp) = FALSE THEN Open(w_emp)
Supported	KeyDown	When the Done key of the virtual keyboard in iOS and Android is hit, the KeyDown and KeyUp events of the control with focus will be triggered, and the value of KeyCode parameter is keyenter. On the Android-based device, the KeyDown event will not be triggered if predictive text input method is used.
Supported	MessageBox	li_return = MessageBox('Title1','Text1',Information!,OK!,1)
Supported	PixelsToUnits	li_return = PixelsToUnits(35, XPixelsToUnits!)
Unsupported	PopulateError	
Supported	RGB	ll_color = RGB(255, 255, 255) The RGB value scope supported: 0~16777215 The custom color scope supported: 16777216~33554431

Support Level	Feature Name	Coding Examples
		Note: If the color value is -2 or -1 (Transparent), the color display effect will be different in the mobile application from in the PowerBuilder application. If it is a color unsupported (the color value is less than -2), the color will be replaced with ButtonFace color.
Supported	SetNull	SetNull(ls_test)
Partially Supported	SetPointer	SetPointer(HourGlass!) Only HourGlass is supported. When set to HourGlass, the image displayed in iOS and Android is the activity indicator, which is different from PowerBuilder. The activity indicator will also automatically appear every time when the client calls the server, you can set to empty string SetPointer("") to not automatically display the activity indicator.
Unsupported	SignalError	
Supported	Sleep	Sleep (5)
Supported	UnitsToPixels	li_return = UnitsToPixels(350, YUnitsToPixels!)

7.1.1.10 Numeric Functions

Table 7.12: Functions

Support Level	Feature Name	Coding Examples
Supported	Abs	ldec_return = Abs(-15725.12) ldec_return = Abs(ai_num)
Supported	ACos	ldb_ return = ACos(.84147) ldb_ return = ACos(af_num)
Supported	ASin	ldb_ return = ASin(.84147) ldb_ return = ASin(af_num)
Supported	ATan	ldb_ return =Atan(.84147) ldb_ return = ATan(af_num)
Supported	Ceiling	li_ return = Ceiling(3558.5) li_ return = Ceiling(af_num)
Supported	Cos	ldb_ return = Cos(10586.3) ldb_ return = Cos(af_num)
Supported	Exp	ldb_ return = Exp(17438.15)

Support Level	Feature Name	Coding Examples
		ldb_ return = Exp(af_num)
Supported	Fact	ldb_ return = Fact(14) ldb_ return = Fact(af_num)
Supported	Int	li_ return = Int(8314.11) li_ return = Int(af_num)
Supported	Log	ldb_ return = Log(7628) ldb_ return = Log(af_num)
Supported	LogTen	ldb_ return = LogTen(30975.5) ldb_ return = LogTen(af_num)
Supported	Max	ldb_ return = LogTen(30975.5) ldb_ return = LogTen(af_num)
Supported	Min	ldec_ return = Min(1019,21120) ldec_ return = Min(af_num,bf_num)
Supported	Mod	ldec_ return = Mod(32526,8261.15) ldec_ return = Mod(af_num,bf_num)
Supported	Pi	ldb_ return = Pi(20852) ldb_ return = Pi(af_num)
Supported	Rand	ldec_ return = Rand(14888) ldec_ return = Rand(af_num)
Supported	Randomize	Randomize(0)
Supported	Round	ldec_ return = Round(6655.16973,3) ldec_ return = Round(af_num,b_num) Executing Round in SQL statements, decimals will be ignored on mobile.
Supported	Sign	li_ return = Sign(0) li_ return = Sign(-543534) li_ return = Sign(4563) li_ return = Sign(af_num)
Supported	Sin	ldb_ return = Sin(-751) ldb_ return = Sin(751) ldb_ return = Sin(af_num)
Supported	Sqrt	ldb_ return = Sqrt(740752012) ldb_ return = Sqrt(af_num)
Supported	Tan	ldb_ return = Tan(28713.4)

Support Level	Feature Name	Coding Examples
		ldb_ return = Tan(af_num)
Supported	Truncate	ldec_ return = Truncate(21133.24473,3) ldeci_ return = Truncate(af_num)

7.1.1.11 Print Functions

Mobile platform difference:

For Android, Print functions are unsupported.

For iOS, some Print functions are supported. See the following table for details.

Table 7.13: Print Functions

Support Level	Feature Name	Coding Examples
Partially Supported	Print	Only the following syntax is supported in iOS: `Print (printjobnumber, {tab1, } string {, tab2})`
Supported	PrintBitMap	
Unsupported	PrintCancel	In iOS, the user can only manually cancel the print job in the iOS Printer Center.
Supported	PrintClose	
Supported	PrintDataWindow	
Supported	PrintDefineFont	Only the iOS-supported fonts can be used. If other fonts are used, the iOS default font Helvetica will be used.
Unsupported	PrintGetPrinter	iOS does the printing through a WIFI printer called AirPrint, and no printer driver needs to be installed at the client.
Unsupported	PrintGetPrinters	
Supported	PrintLine	
Supported	PrintOpen	
Supported	PrintOval	
Unsupported	PrintPage	In iOS, the user can only manually select a single page or a range of pages to print.
Supported	PrintRect	
Supported	PrintRoundRect	
Supported	PrintScreen	PrintScreen prints the current window including any visual part in it, but excludes the other visual elements outside of the application such as the iOS status bar. You can press the Home button and the

Support Level	Feature Name	Coding Examples
		On/Off button of the iOS device at the same time to capture a screenshot of the entire iOS screen.
Unsupported	PrintSend	
Supported	PrintSetFont	
Unsupported	PrintSetPrinter	
Unsupported	PrintSetSpacing	iOS font does not support this setting.
Unsupported	PrintSetup	
Unsupported	PrintSetupPrinter	
Supported	PrintText	
Supported	PrintWidth	
Supported	PrintX	
Supported	PrintY	

7.1.1.12 String Functions

Table 7.14: Functions (for PB9)

Support Level	Feature Name	Coding Examples
Supported	Asc	li_test = Asc('adfsd') li_test = Asc('~nern') li_test = Asc(ls_test) li_test = Asc(wf_getstring())
Supported	Char	ls_test1 = Char(65) ls_test1 = Char("~n~~djfksdl")
Supported	Fill	ls_fill = Fill('-+',10) ls_fill = Fill('hello', 6)
Supported	FillW	ls_fill = FillW('-+',10) ls_fill = FillW('hello', 6)
Supported	LastPos	ll_return = LastPos('Appeon Appeon', 'Ap') ll_return = LastPos('Appeon Appeon', 'Ap',4)
Supported	Left	ls_return = string(Left('z{uDPk7#k',9))
Supported	LeftTrim	ls_return = string(LeftTrim(' fdfsdf')) ls_return = string(LeftTrim(' 34ttrtertgre')) The second argument is unsupported, for example, the following script is unsupported: ls_return = string(LeftTrim(' fdfsdf', true))

Support Level	Feature Name	Coding Examples
		ls_return = string(LeftTrim(' 34ttrtertgre', true))
Supported	LeftTrimW	ls_return = string(LeftTrimW(' fdfsdf')) ls_return = string(LeftTrimW(' 34ttrtertgre'))
Supported	LeftW	ls_return = string(LeftW('z{uDPk7#k',9))
Supported	Len	ls_return = string(Len('gfgdfgsdrgdfg'))
Supported	LenW	ls_return = string(LenW('gfgdfgsdrgdfg'))
Supported	Lower	ls_return = Lower(“You ARE Welcome!”)
Supported	Match	ls_return = string(Match('ABBBC,ABB*C'))
Supported	MatchW	ls_return = string(MatchW('ABBBC,ABB*C'))
Supported	Mid	ls_return = string(Mid('Appeon Appeon',5,2))
Supported	MidW	ls_return = string(MidW('Appeon Appeon',5,2))
Supported	Pos	ls_return = string(Pos('Appeon Appeon','on')) ls_return = string(Pos('Appeon Appeon','peon',2))
Supported	PosW	ls_return = string(PosW('Appeon Appeon','on')) ls_return = string(PosW('Appeon Appeon','peon',2))
Supported	Replace	ls_return = string(Replace('BABE RUTH', 1, 4, 'BABY'))
Supported	ReplaceW	ls_return = string(ReplaceW('BABE RUTH', 1, 4, 'BABY'))
Supported	Reverse	ls_return = string(Reverse('vDl%Qv'))
Supported	Right	ls_return = string(Right('Davis', 4))
Supported	RightTrim	ls_return = string(RightTrim('fsdjd ')) ls_return = string(RightTrim('fsdfjdlfsd ')) The second argument is unsupported, for example, the following script is unsupported: ls_return = string(RightTrim('fsdjd ', true)) ls_return = string(RightTrim('fsdfjdlfsd ', true))
Supported	RightTrimW	ls_return = string(RightTrimW('fsdjd ')) ls_return = string(RightTrimW('fsdfjdlfsd '))
Supported	RightW	ls_return = string(RightW('Davis', 4))
Supported	Space	ls_return = string(Space(14))
Supported	Trim	ls_return = string(Trim(' uifusd ')) The second argument is unsupported, for example, the following script is unsupported:

Support Level	Feature Name	Coding Examples
		ls_return = string(Trim(' uifusd ', true))
Supported	TrimW	ls_return = string(TrimW(' uifusd '))
Supported	Upper	ls_return = string(Upper('how do you do?'))
Supported	WordCap	ls_return = string(WordCap('how do you do?'))

Table 7.15: Functions (for PB 10 or above)

Support Level	Feature Name	Coding Examples
Supported	Asc	li_test = Asc('~nern') li_test = Asc(wf_getstring())
Supported	AscA	li_test = AscA('adfsd') li_test = AscA(ls_test) Note: The function returns different value on mobile from that in PowerBuilder if the character encoding is non-SJIS.
Supported	Char	ls_test = Char(65) ls_test = Char("~n~~djfksdl")
Supported	CharA	ls_test = CharA(65) ls_test = CharA("~n~~djfksdl") Note: The function returns different value on mobile from that in PowerBuilder if the character encoding is non-SJIS.
Supported	Fill	ls_fill = Fill('-+',10) ls_fill = Fill('hello', 6)
Supported	FillA	ls_fill = FillA('-+',10) ls_fill = FillA('hello', 6) Note: The function returns different value on mobile from that in PowerBuilder if the character encoding is non-SJIS.
Supported	FillW	ls_fill = FillW('-+',10) ls_fill = FillW('hello', 6)
Supported	LastPos	ll_return = LastPos('Appeon Appeon', 'Ap') ll_return = LastPos('Appeon Appeon', 'Ap',4
Supported	Left	ls_return = string(Left('z{uDPk7#k',9))
Supported	LeftA	ls_return = string(LeftA('z{uDPk7#k',9))

Support Level	Feature Name	Coding Examples
		Note: The function returns different value on mobile from that in PowerBuilder if the character encoding is non-SJIS.
Supported	LeftTrim	ls_return = string(LeftTrim(' fdfsdf')) ls_return = string(LeftTrim(' 34ttrtertgre'))
Supported	LeftTrimW	ls_return = string(LeftTrimW(' fdfsdf')) ls_return = string(LeftTrimW(' 34ttrtertgre'))
Supported	LeftW	ls_return = string(LeftW('z{uDPk7#k',9))
Supported	Len	ls_return = string(Len('gfgdfgsdrgdfg'))
Supported	LenA	ls_return = string(LenA('gfgdfgsdrgdfg')) Note: The function returns different value on mobile from that in PowerBuilder if the character encoding is non-SJIS.
Supported	LenW	ls_return = string(LenW('gfgdfgsdrgdfg'))
Supported	Lower	ls_return = Lower(“You ARE Welcome!”)
Supported	Match	ls_return = string(Match('ABBBC,ABB*C'))
Supported	MatchW	ls_return = string(MatchW('ABBBC,ABB*C'))
Supported	Mid	ls_return = string(Mid('Appeon Appeon',5,2))
Supported	MidA	ls_return = string(MidA('Appeon Appeon',5,2)) Note: The function returns different value on mobile from that in PowerBuilder if the character encoding is non-SJIS.
Supported	MidW	ls_return = string(MidW('Appeon Appeon',5,2))
Supported	Pos	ls_return = string(Pos('Appeon Appeon','on')) ls_return = string(Pos('Appeon Appeon','peon',2))
Supported	PosA	ls_return = string(PosA('Appeon Appeon','on')) ls_return = string(PosA('Appeon Appeon','peon',2)) Note: The function returns different value on mobile from that in PowerBuilder if the character encoding is non-SJIS.
Supported	PosW	ls_return = string(PosW('Appeon Appeon','on')) ls_return = string(PosW('Appeon Appeon','peon',2))
Supported	Replace	ls_return = string(Replace('BABE RUTH', 1, 4, 'BABY'))
Supported	ReplaceA	ls_return = string(ReplaceA('BABE RUTH', 1, 4, 'BABY'))

Support Level	Feature Name	Coding Examples
		Note: The function returns different value on mobile from that in PowerBuilder if the character encoding is non-SJIS.
Supported	ReplaceW	ls_return = string(ReplaceW('BABE RUTH', 1, 4, 'BABY'))
Supported	Reverse	ls_return = string(Reverse('vDl%Qv'))
Supported	Right	ls_return = string(Right('Davis', 4))
Supported	RightA	ls_return = string(RightA('Davis', 4)) Note: The function returns different value on mobile from that in PowerBuilder if the character encoding is non-SJIS.
Supported	RightTrim	ls_return = string(RightTrim('fsdjd')) ls_return = string(RightTrim('fsdfjdlfsd'))
Supported	RightTrimW	ls_return = string(RightTrimW('fsdjd')) ls_return = string(RightTrimW('fsdfjdlfsd'))
Supported	RightW	ls_return = string(RightW('Davis', 4))
Supported	Space	ls_return = string(Space(14))
Supported	Trim	ls_return = string(Trim('uifusd'))
Supported	TrimW	ls_return = string(TrimW('uifusd'))
Supported	Upper	ls_return = string(Upper('how do you do?'))
Supported	WordCap	ls_return = string(WordCap('how do you do?'))

7.1.1.13 System & Environment Functions

Table 7.16: Functions

Support Level	Feature Name	Coding Examples
Unsupported	Clipboard	
Supported	CommandParm	String ls_command_line ls_command_line = CommandParm()
Supported	GetApplication	application app app = GetApplication()
Supported	GetEnvironment	environment env integer rtn rtn = GetEnvironment(env)
Supported	GetFocus	Lobj_control = GetFocus()
Supported	Handle	Note: the Handle property is partially supported

Support Level	Feature Name	Coding Examples
		Supported syntax: Handle (objectname) Unsupported syntax: Handle (objectname, previous)
Supported	Post	Post(Handle(w_date), 277, 3, 0) Note: the message# argument cannot be a user defined message number.
Supported	ProfileInt	ProfileInt ("C:\PROFILE.INI", "PB", "maximized", 3)
Supported	ProfileString	ProfileString ("C:\PROFILE.INI", "Employee","Name", "None")
Unsupported	Restart	
Supported	Run	**This function is supported in Android only, and unsupported in iOS.** Run (string {, windowstate }) The string parameter can only be the full path of the file name; it cannot be a program name, or a file name without a path. The windowstate parameter is unsupported; the program window will be maximized by default when run in Android. Supported syntax: Run ("/storage/emulated/0/android/data/com.appone.mobile/files/626342311/plugin/test.pdf") This will give control to Android, and Android will decide whether to prompt the user to select a program to open the PDF file (if there is more than one PDF viewer program installed on it), or directly open the PDF file if only one PDF viewer program is detected or a default PDF viewer program is set before. Then the Appeon mobile app will be switched to run in the background, and the PDF viewer program will be running at the foreground. Unsupported syntax: Run ("Clock", Minimized!)
Supported	Send	Send(Handle(w_emp), 277, 2, 0) Note: the message# argument cannot be a user defined message number. In Appeon Mobile, the Assistive Touch Bar (containing Left-Click, Right-Click, and Drag modes) is introduced which will cause some differences in message handling. In the Left-

Support Level	Feature Name	Coding Examples
		Click mode, LButtonDown will not be handled immediately until Appeon Mobile detects that the current mode is not the Drag mode. If at the same time the user performs a Click operation (LButtonDown is triggered first, then LButtonUp), LButtonDown and LButtonUp will be handled simultaneously when LButtonUp is triggered.
Supported	SetProfileString	SetProfileString("C:\PROFILE.INI", "Position", "Title", "MGR")
Unsupported	SignalError	

Supported	Yield	Yield()
		To update the UI in a loop, in iOS and Android the UI will not be updated until the Yield function is called, while on Windows and PowerBuilder, the UI will be updated even if no Yield function is called.
		Note: When the Yield function is called in more than one function or event, try to avoid executing re-entry code. If the reentry code is processing a long task and it is not completed when it is executed again in another place, serious problems may occur.
		For example, the script of the cb_1.click event is as follows:
		`for i = 1 to 1000`
		`  yield()`
		`  dw_1.retrieve()`
		`next`
		When clicking the command button twice, if dw_1 retrieves a large amount of data, then there is a possibility that when the dw_1.retrieve() function for the first click is still being executed, it is executed again after the second click. This would cause system errors.

7.1.1.14 Timing Functions

Table 7.17: Functions

Support Level	Feature Name	Coding Examples
Supported	CPU	long ll_start ll_start = Cpu()

Support Level	Feature Name	Coding Examples
Supported	Idle	Idle(300)
Unsupported	Start	
Supported	Timer	Timer(10, w_main) Note: In Android and iOS, MessageBox will block the execution of the Timer event.

7.1.1.15 Window Functions

Table 7.18: Functions

Support Level	Feature Name	Coding Examples
Supported	Close	close(w_commandbutton) close(parent)
Supported	CloseWithReturn	CloseWithReturn(parent,"return value") Notes: 1. In PowerBuilder, the return value is Null when there are two Nulls in the parameter. In this case, the return value in JavaScript is not Null. 2. On mobile, if the returnvalue parameter is NULL, the return value will be stored in the PowerObjectParm property of the Message object.
Supported	Open	Open(w_main, parent)

Supported	OpenSheet	OpenSheet(w_main,w_parent)
		OpenSheet(lw_main , "w_main", w_frame , 2, Cascaded!)
		Notes:
		1. When opening the same local window variables more than once within the same function, the result is unpredictable. Avoid using the OpenSheet window function in the following manner:
		`w_11 ww`
		`opensheet (ww, "w_11", w_2, 2, Cascaded!)`
		`opensheet (ww, "w_11", w_2, 0, Cascaded!)`
		2. The following syntax is supported:
		`OpenSheet (sheetrefvar {, windowtype},`
		` mdiframe {, position {, arrangeopen}})`

Support Level	Feature Name	Coding Examples
		3. The *ArrangeOpen* argument can be Cascaded!, Layered!, Original!. If the argument is Cascaded!, the size of the sheet on mobile is different from that in PowerBuilder. 4. In Windows 7, the upper part of the window (sheet) that is opened by using OpenSheet or OpenSheetWithParm may be overlapped by the MDI frame window. If this happens, you can work it around by using the Post function with OpenSheet or OpenSheetWithParm as shown below: `post opensheet (w_main, w_mdi, ...)`

Supported	OpenSheetWithParm	`String ls_str`
		`OpenSheetWithParm (w_main, ls_str, w_parent)`
		
		Note: The window type in the function cannot be MDI or MDIHelp.
		
		The following syntax is supported:
		
		`OpenSheetWithParm (sheetrefvar, parameter {, windowtype}, mdiframe {, position {, arrangeopen}})`

Supported	OpenWithParm	`OpenWithParm (w_main, w_parent)` Notes: 1. The window type in the function cannot be MDI or MDIHelp. 2. On mobile, if the parameter argument is NULL, the argument will be stored in the PowerObjectParm property of the Message object.

7.1.2 Unsupported functions

- The following are the unsupported system function categories that do not contain any supported individual functions:

Table 7.19:

Class Definition Functions	DDE Server Functions	Garbage Collection Functions
Help Functions	Library Functions	Printer Functions
Print Functions	Registry Functions	Shared Object Functions (SharedObject Functions)

Tracing Functions		

- Having a parent object dynamically call a system function that is overloaded by its child object is unsupported.

7.2 User functions

Supported

- Object Functions
- Global Functions
- Global and local External Functions
- Global and local Remote Procedure Calls (RPC)

Unsupported

- Dynamic creation of global functions.

8 Events

8.1 Event types

Supported

- User-defined events can be attached to the Application object.
- User-defined events without an ID are supported.
- User-defined events with an ID are supported to the extent that the system message is supported.

Unsupported

- User-defined system messages are not supported.
- The system messages specific for the unsupported system objects/controls are unsupported.
- Selecting the same event ID to declare two events that have different names is not supported.
- Using the local variable AncestorReturnValue in an event of a descendant object is unsupported unless the event of the descendant object is an extended event from the ancestor object, or the AncestorReturnValue is generated in Call Super statement.
- If a system event involves a UI operation, the subsequent event will not be triggered until the UI operation is done.
- Avoid the following code, because it will cause system error to the deployed application:

  An event in an event sequence destroys some container (such as closing a window or destroying a user object), and then a subsequent event in the sequence calls to the container or controls/objects in the container.

  For example, in case uo_1 contains cb_1 and there is an event sequence (ue_1.ue_2.ue_3), if uo_1 is deleted in ue_2 but cb_1 is called in ue_3, application will crash.

- In some cases, the event triggering sequence is inconsistent between PB and Appeon Mobile, for example, the code as shown below:

```
event open;
String ls_Title,ls_FilePath,ls_FileName
Post Event pfc_PostOpen()
is_EventTrack += This.ClassName() + '.Open1()~r~n'
GetFileOpenName(ls_Title,ls_FilePath,ls_FileName)
is_EventTrack += This.ClassName() + '.Open2()~r~n'
end event
```

  In PB, the pfc_PostOpen event is triggered only after the Open event is executed completely. Whereas, in Appeon Mobile, the pfc_PostOpen event is triggered right after the GetFileOpenName function is executed.

8.2 System messages

Supported

The following table lists the supported system messages.

Table 8.1:

Object/Control	Event ID	System Event using the ID
All	pbm_constructor	Constructor
	pbm_destructor	Destructor
Controls and windows	pbm_rbuttondown	RButtonDown
Window	pbm_activate	Activate
	pbm_close	Close
	pbm_closequery	CloseQuery
	pbm_deactivate	Deactivate
	pbm_dragdrop	DragDrop
	pbm_dragenter	DragEnter
	pbm_dragleave	DragLeave
	pbm_dragwithin	DragWithin
	pbm_hidewindow	Hide
	pbm_lbuttonclk	Clicked
	pbm_lbuttondblclk	DoubleClicked
	pbm_lbuttondown	MouseDown
	pbm_lbuttonup	MouseUp
	pbm_mousemove	MouseMove
	pbm_open	Open
	pbm_showwindow	Show
	pbm_size	Resize
	pbm_timer	Timer
CheckBox, CommandButton, Picture, PictureButton, RadioButton, StaticText	pbm_bnclicked	Clicked
	pbm_bndragdrop	DragDrop
	pbm_bndragenter	DragEnter
	pbm_bndragleave	DragLeave
	pbm_bndragwithin	DragWithin
	pbm_bnkillfocus	LoseFocus
	pbm_bnsetfocus	GetFocus
DropDown ListBox, DropDown PictureListBox	pbm_cbnkillfocus	LoseFocus
	pbm_cbnmodified	Modified
	pbm_cbnselchange	SelectionChanged

Object/Control	Event ID	System Event using the ID
	pbm_cbnsetfocus	GetFocus
DataWindow, DataStore	pbm_dwnchanging	EditChanged
	pbm_dwnbuttonclicked	ButtonClicked
	pbm_dwnbuttonclicking	ButtonClicking
	pbm_dwndragdrop	DragDrop
	pbm_dwndragenter	DragEnter
	pbm_dwndragleave	DragLeave
	pbm_dwndragwithin	DragWithin
	pbm_dwndberror	DBError
	pbm_dwnhscroll	ScrollHorizontal
	pbm_dwnitemchange	ItemChanged
	pbm_dwnitemchangefocus	ItemFocusChanged
	pbm_dwnitemvalidationerror	ItemError
	pbm_dwnkillfocus	LoseFocus
	pbm_dwnlbuttonclk	Clicked
	pbm_dwnlbuttondblclk	DoubleClicked
	pbm_dwnrbuttondown	RButtonDown
	pbm_dwnresize	Resize
	pbm_dwnretrieveend	RetrieveEnd
	pbm_dwnretrievestart	RetrieveStart
	pbm_dwnrowchange	RowFocusChanged
	pbm_dwnrowchanging	RowFocusChanging
	pbm_dwnsetfocus	GetFocus
	pbm_dwnupdateend	UpdateEnd
	pbm_dwnupdatestart	UpdateStart
SingleLineEdit, EditMask, MultiLineEdit, StaticText	pbm_endragdrop	DragDrop
	pbm_endragenter	DragEnter
	pbm_endragleave	DragLeave
	pbm_endragwithin	DragWithin
	pbm_enkillfocus	LoseFocus
	pbm_enmodified	Modified
	pbm_ensetfocus	GetFocus
OLEControl	(none)	Clicked
	(none)	PropertyChanged
	(none)	PropertyRequestEdit

Object/Control	Event ID	System Event using the ID
	pbm_omnclose	Close
	pbm_constructor	Constructor
	pbm_doubleclick	DoubleClicked
	pbm_omndragdrop	DragDrop
	pbm_omndragenter	DragEnter
	pbm_omndragleave	DragLeave
	pbm_omndragwithin	DragWithin
	pbm_omnrename	Rename
	pbm_omnsave	Save
	pbm_omnsaveobject	SaveObject
	pbm_omnviewchange	ViewChange
HScrollBar, HTrackBar, VScrollBar, VTrackBar	pbm_sbndragdrop	DragDrop
	pbm_sbndragenter	DragEnter
	pbm_sbndragleave	DragLeave
	pbm_sbndragwithin	DragWithin
	pbm_sbnlinedown	LineDown, LineRight
	pbm_sbnlineup	LineLeft, LineUp
	pbm_sbnthumbtrack	Moved
	pbm_sbnpagedown	PageDown, PageRight
	pbm_sbnpageup	PageLeft, PageUp
ListBox, PictureListBox	pbm_lbndblclk	DoubleClicked
	pbm_lbndragdrop	DragDrop
	pbm_lbndragenter	DragEnter
	pbm_lbndragleave	DragLeave
	pbm_lbndragwithin	DragWithin
ListView	pbm_lvnbegindrag	BeginDrag
	pbm_lvnbeginlabeledit	BeginLabelEdit
	pbm_lvnbeginrightdrag	BeginRightDrag
	pbm_lvncolumnclick	ColumnClick
	pbm_lvnclicked	Clicked
	pbm_lvndeleteallitems	DeleteAllItems
	pbm_lvndeleteitem	DeleteItem
	pbm_lvndoubleclicked	DoubleClicked
	pbm_lvndragdrop	DragDrop
	pbm_lvndragenter	DragEnter

Object/Control	Event ID	System Event using the ID
	pbm_lvndragleave	DragLeave
	pbm_lvndragwithin	DragWithin
	pbm_lvnendlabeledit	EndLabelEdit
	pbm_lvnsetfocus	GetFocus
	pbm_lvnitemchanging	ItemChanging
	pbm_lvnkillfocus	LoseFocus
	pbm_lvnrclicked	RightClicked
	pbm_lvnrdoubleclicked	RightDoubleClicked
Tab	pbm_tcnclicked	Clicked
	pbm_tcndoubleclicked	DoubleClicked
	pbm_tcnrclicked	RightClicked
	pbm_tcnrdoubleclicked	RightDoubleClicked
	pbm_tcndragdrop	DragDrop
	pbm_tcndragenter	DragEnter
	pbm_tcndragleave	DragLeave
	pbm_tcndragwithin	DragWithin
	pbm_tcnsetfocus	GetFocus
	pbm_tcnselchanging	SelectionChanging
TreeView	pbm_tvnbegindrag	BeginDrag
	pbm_tvnbeginlabeledit	BeginLabelEdit
	pbm_tvnbeginrightdrag	BeginRightDrag
	pbm_tvnclicked	Clicked
	pbm_tvndeleteitem	DeleteItem
	pbm_tvndoubleclicked	DoubleClicked
	pbm_tvndragdrop	DragDrop
	pbm_tvndragenter	DragEnter
	pbm_tvndragleave	DragLeave
	pbm_tvndragwithin	DragWithin
	pbm_tvnitemexpanded	ItemExpanded
	pbm_tvnitemexpanding	ItemExpanding
	pbm_tvnitempopulate	ItemPopulate
	pbm_tvnkillfocus	LoseFocus
	pbm_tvnselchanged	SelectionChanged
	pbm_tvnselchanging	SelectionChanging
	pbm_tvnsetfocus	GetFocus

Object/Control	Event ID	System Event using the ID
	pbm_tvnrclicked	RightClicked
	pbm_tvnendlabeledit	EndLabelEdit
Application	(None)	Open
	(None)	Close
	(none)	Idle
User Object	pbm_uondragdrop	DragDrop
	pbm_uondragenter	DragEnter
	pbm_uondragleave	DragLeave
	pbm_uondragwithin	DragWithin
Menu	(None)	Clicked
	(None)	Selected

Unsupported

The following table lists the unsupported system messages for the supported system objects/ controls:

Table 8.2:

Object/Control	Event ID	System Event using the ID
All	pbm_keydown	Key
Controls and windows	pbm_other	Other
Window	pbm_help	Help
	pbm_ddedata	HotLinkAlarm
	pbm_ddeexecute	RemoteExec
	pbm_ddeadvise	RemoteHotLinkStart
	pbm_ddeunadvise	RemoteHotLinkStop
	pbm_dderequest	RemoteRequest
	pbm_ddepoke	RemoteSend
	pbm_syskeydown	SystemKey
	pbm_tbnmoved	ToolbarMoved
DataWindow, DataStore	(none)	Error
	pbm_dwnretrieverow	ScrollVertical
	pbm_dwnvscroll	ItemActivate
ListView	pbm_lvnitemactivate	ItemActivate
	pbm_lvnsort	Sort
Application	(none)	IdleSystemError
OLEControl	(none)	Error
	(none)	ExternalException

Object/Control	Event ID	System Event using the ID
	pbm_help	Help
	pbm_other	Other

8.3 System message (non-standard EventID)

Supported

The following table lists the supported system messages.

Table 8.3:

Object/Control	Event ID (non-standard)	System Event using the ID
All	pbm_contextmenu	ContextMenu Note: Event bubbling is unsupported.
DataWindow	pbm_dwndropdown	DropDown
	pbm_dwnrbuttonup	Rbuttonup
	pbm_dwnprocessenter	Processenter
	pbm_rbuttondown	
	pbm_lbuttondown	
	pbm_rbuttonup	
	pbm_lbuttonup	

Unsupported

Except for the system messages listed in the table above, all other system messages with non-standard event IDs are unsupported by Appeon. For example, pbm_enchange event is unsupported. Refer to PowerBuilder Help for more details.

9 DataWindow

9.1 DataWindow data sources

Supported

The following PowerBuilder data sources are supported:

- Quick Select
- SQL Select
- Query
- Stored Procedure
- External
- Web Service

Notes:

1. You can group your stored procedure in ASE Server.
2. If a DataWindow uses an external data source, the content of the DataWindow can only be saved as TXT type.
3. In the Web Service DataWindow, if the date data is empty or null, it will return a default value "0001-1-1" which will be parsed as "2001-1-1" on mobile, whereas parsed as "0001-1-1" in PowerBuilder.
4. The Web Service DataWindow supports the Boolean, Byte, Char, Date, DateTime, Decimal, Double, Integer, Long, String, and Time data types and array, but does not support the Blob data type, pass by reference, and structure.

Unsupported

- Dynamically changing the SQL statement of an external data source is unsupported.
- If a DataWindow uses a stored procedure as its data source and the stored procedure has multiple result sets, the deployed DataWindow always takes the first result set.
- If a DataWindow uses a stored procedure as its data source, the Table.Select property cannot be modified, and the SetSQLSelect function cannot be executed.
- If a DataWindow uses an ASE stored procedure as its data source, the AutoCommit property must be set to TRUE and the chain must be off.

9.2 Using SQL statements in DataWindows

Requirements

If you specify the table owner in the Specify Update Properties window in PowerBuilder, please make sure the Enclose table and column names in Quote option is not selected in Appeon Developer during the deployment or errors will occur.

If you specify the argument name in Specify Retrieval Arguments window in PowerBuilder, use ASCII characters.

Do not use FOR UPDATE non-cursor statement in the SQL statement for DataWindows.

9.3 DataWindow presentation styles

Table 9.1:

CrossTab, Composite, Freeform, Graph, Grid, Group, Label, N-Up, Tabular and TreeView presentation styles	**Supported**
	• DataWindow objects and controls in a DataWindow can be dynamically created (e.g. by using the CREATE statement). • CrossTab, Composite, Freeform, Graph, Grid, Group, Label, N-Up, Tabular, and TreeView style DataWindows are implemented in XML in Appeon applications. • Decimal retrieval argument is supported.
	Differences
	For all supported DataWindows, it ignores the upper or lower case when sorting by the column names. For **CrossTab** style, refer to the detailed description of differences CrossTab DataWindow. If the CrossTab DataWindow object contains over 3 headers, make sure the columns are sorted in the same order in both the DataWindow object and the SQL scripts, otherwise the value displayed in the detail field will be incorrect. For **Composite** style, refer to the detailed description of differences Composite DataWindow. For **Freeform** style, when a user adjusts a scrollbar up and down, before the user releases the scrollbar, the DataWindow's contents are scrolled up and down in correspondence with the scrollbar's position. This does not happen in PowerBuilder applications. For **Grid** style: 1. mobile application supports dragging and dropping columns in different locations on a Grid DataWindow. You can select a column header and drag it over other columns and drop the column in any location within the DataWindow. The selected column will be highlighted. 2. Sorting a column or selecting all the items by clicking the column header is unsupported. 3. In PowerBuilder, the tab sequence in a Grid DataWindow object is always left to right (except for right-to-left operating systems). Changing the tab value to any number

	other than 0 has no effect. In the mobile Grid DataWindow, changing the tab value to any number other than 0 does have an effect. If the user presses Tab, the focus will change according to the predefined tab order. 4. The color of the DataWindow border will be changed as the background color changes in the PowerBuilder application. This is not so in the mobile application. 5. If "Suppress Repeating Values" is selected for rows, there will be noticeable short breaks in the grid lines. For **Group** style, refer to the detailed description of differences Grouping in DataWindow. For **Graph** style, refer to the detailed description of differences Graph DataWindow. For **Label** style, RowFocusChange event is unsupported. For **N-Up** style, when dynamically changing the height of DataWindow, the number of pages is recalculated on the mobile but it is not recalculated in PowerBuilder. For **TreeView** style, refer to the detailed description of differences TreeView DataWindow. For more DataWindow user operation differences, refer to DataWindow user operation differences.
Other DataWindow presentation styles	**Unsupported**
	OLE DataWindow RichText DataWindow

9.3.1 Composite DataWindow

Table 9.2:

Nested reports in a Composite DataWindow	**Supported**			
	Nested reports that are of the following presentation styles can be added into the Composite DataWindow, and the Web Composite DataWindow is implemented in XML:			
	CrossTab	Freeform	Graph	Grid
	Group	Label	N-Up	Tabular
	RichText	TreeView		
	Placing reports in the Group band is supported. Placing Group reports in any DataWindow band is supported.			
Retrieval arguments	**Supported**			
	Retrieval arguments of the nested report is supported in the composite DataWindow.			

Row-scrolling functions	**Unsupported**			
	Calling the following DataWindow functions in nested reports is unsupported:			
	ScrollToRow	ScrollPriorPage	ScrollNextPage	ScrollPriorRow
	ScrollNxetRow			
Performance differences between PowerBuilder and mobile	**Differences**			
	In Appeon Mobile, if the Y property of a nested report is negative, the header band of the nested report overlaps the detail band. In Appeon Mobile, if the Trail_Footer property of a nested report control is set to True, the footer band of the nested report will be displayed after the summary band. If the Trail_Footer property is set to False, the footer band will always be displayed at the bottom of current DataWindow band. In Appeon Mobile, if the content in a Composite DataWindow cannot be displayed in one page horizontally, it will be displayed on a separate page. In Appeon Mobile, if you want to do a data retrieval for the Composite DataWindow, a transaction object always needs to be set. If the Visible property of a nested report is dynamically changed from TRUE to FALSE, the nested report is counted as visible in PowerBuilder, but invisible In Appeon Mobile, when the Composite DataWindow breaks pages or counts the height of the detail band. The NewPage property will have effect in all DataWindow bands In Appeon Mobile. However, it can only have effect in the detail band in PowerBuilder. In the Detail band, the Height.Autosize property cannot be changed by using the Modify function. In PowerBuilder, if the Summary band cannot be displayed within one page, the last row of the detail band and the whole summary band will be displayed in the next new page. However, In Appeon Mobile, the summary band that cannot be fully displayed within the rest space of the page will be ignored. If the width of the content of a nested crosstab datawindow cannot be displayed within the report control, the exceeding content will be ignored in Appeon Mobile.			

9.3.2 CrossTab DataWindow

Table 9.3:

Controls in CrossTab DataWindow	**Supported**	
	Button	Text
	Picture	GroupBox

	Line	Oval
	Rectangle	RoundRectangle
	Computed Field	Graph
	GroupBox is visible before inputting any data and is invisible after inputting data.	
	Unsupported	
	Column	Report
	TableBlob	
DataWindow object properties for CrossTab presentation style	**Supported**	
	Crosstab.SourceNames(r/w)	Crosstab.Rows(r)
	Crosstab.Columns(r)	Crosstab.Values(r)
	Crosstab.StaticMode(r)	Table.CrosstabData(r)
	Properties marked with "(r)" can be read - but not changed - in script. Properties marked with "(r/w)" can be read or changed in script. It is supported to use expressions like sum (units for crosstab) only in CrossTab.Values. It is unsupported to use such expressions in other properties that can contain expressions.	
	Unsupported	
	Help.TypeID.SetCrosstab	
DataWindow control methods for CrossTab DataWindow	**Supported**	
	GetMessageText	
	Unsupported	
	CrosstabDialog	
DataWindow expression functions for CrossTab DataWindow	**Supported**	
	CrosstabAvg	CrosstabCount
	CorsstabMax	CrosstabMin
	CrosstabSum	
Performance differences between PowerBuilder and mobile	**Differences**	
	Adding columns in CrossTab DataWindow is unsupported. If you add a column in CrossTab DataWindow by "copy" and "paste" in PowerBuilder, the new column will not display in the mobile application. When the footer band of a Crosstab DataWindow is higher than the DataWindow, detail band displays in PowerBuilder while footer band displays in the mobile application. If the argument of SetFilter() is NULL, in the Specify Filter dialog it displays the columns in detail band in PowerBuilder. In Appeon Mobile application, it displays the columns in detail band as well as the dynamically generated columns.	

	After dynamically modifying Expression property of a computed field control in CrossTab DataWindow, data will be recalculated according to the new expression in the mobile application. In PowerBuilder, the data will not be recalculated. When dynamically modifying the properties that affect position, it automatically refreshes the interface in the mobile application but it does not in PowerBuilder. After retrieving data in CrossTab DataWindow, the position of controls (excluding Text control, Column control and Computed Filed control) will be rearranged in Appeon mobile application. This is different from that in PowerBuilder.
Unsupported features	**Unsupported**
	SlideLeft property is unsupported in CrossTab DataWindow. For graph control in CrossTab DataWindow, Values cannot contain aggregate functions. For a CrossTab nested report with arguments, retrieval arguments are unsupported.

9.3.3 Grouping in DataWindow

Grouped DataWindow objects can be created in two ways:

- Use the Group presentation style to create a grouped DataWindow object from scratch.
- Take an existing DataWindow object and define grouping.

Table 9.4:

Group bands	**Supported**	
	Group Header band & Group Trailer band	
	Unsupported	
	None	
Group bands options in the PowerBuilder painter	**Supported**	
	Color	Height
	Group Definition	Reset Page Count
	New Page on Group Break	Autosize Height*
	Group Sort*	
	Group Sort • If a DataWindow contains multiple groups and more than one group is specified with sort criterion in the Group Sort option, the criterion of the group with the largest group band ID will be valid for all the groups on mobile, while the other criteria will be ignored. • It is only support to use aggregate functions in Group sort.	

	Autosize Height • The Autosize Height option is unsupported in Group Header and Group Trailer bands.
	Unsupported
	None
Properties for the Group keyword	**Supported**

	New page
	SyntaxFromSQL:
	`Group (colnum1, colnum2 NewPage)`
	ResetPageCount
	SyntaxFromSQL:
	`Group(col1 {col2...}... ResetPageCount)`

	Unsupported
	None
DataWindow functions for grouping	**Supported**
	Groupcalc* FindGroupChange *Groupcalc* In mobile applications, the Groupcalc function will be executed automatically when values in a group are changed by dot notation or SetItem method.
DataWindow expressions for grouping	**Supported**
	Last / First
	Percent / CumulativeSum
	CumulativePercent
	Unsupported
	Large / Median
	Mode / Small
	Stdev / Stdevp
	Var / Varp

9.3.4 Graph DataWindow

Table 9.5:

Controls in Graph DataWindow	**Supported**
	Graph DataWindow supports the following controls:
	Button / Column
	Computed field / Graph

	GroupBox	Line
	Oval	OLE
	Rectangle	RoundRectangle
	Report	Picture
	Text	
	Unsupported	
	None.	
Graph axises	**Differences**	
	Category axis 1. When setting the categories on the Category axis, you should ensure that the category type and the Category axis type are the same. If they are not, Appeon adopts the first category type you input for this axis and will ignore the one that does not match along with the following. 2. If the expressions are for graphs (for example, sum (units for graph)), do not use it for the category axis. **Value axis** When setting the values on the Value axis, you should ensure that the value type and the Value axis type are the same. If they are not, Appeon adopts the first category type you input for this axis and will ignore the one that does not match along with the following.	
Properties for Graph DataWindow	**Differences**	
	The following DataWindow object properties can be read but not changed in Graph DataWindow:	
	Bandname.Text	HorizontalScrollMaximum
	HorizontalScrollMaximum2	QueryMode
	QuerySort	Rows_Per_Detail
	VerticalScrollMaximum	Zoom
Performance differences between PowerBuilder and mobile	**Differences**	
	In Appeon Mobile, the UI will be automatically refreshed after executing RowsCopy, RowsDiscard, RowsMove and Sort. This is different from in PowerBuilder. Executing GetObjectAtPoint function of DataWindow control does not return the row number. When multiple series are of different data types, the series will be sorted and displayed according to the order of the String data type. It is unsupported to have a nested report in a Graph DataWindow. It is unsupported to operate the properties before drawing a Graph DataWindow.	

	It is unsupported to use overlays in graphs in the DataWindow. The value of the header height cannot be smaller than 0. In pie graph, if there is negative data in a series, the graph displays differently on mobile from in PowerBuilder. In PowerBuilder, the total percentage exceeds 100%. But Appeon ignores the negative data, it display 100% on mobile.

9.3.5 TreeView DataWindow

Table 9.6:

DataWindow object properties for TreeView presentation style	**Supported**		
	AccessibleDescription	AccessibleName	AccessibleRole
	CollapsedTree NodeIconName	DefaultExpandTo Level	ExpandedTreeNode IconNam
	Indent	Level	SelectNodeByMouse
	ShowNodeConnect Lines	ShowLeafNode ConnectLines	ShowTreeNodeIcon
	StateIconAlignMode	TreeNodeIconName	
	Unsupported		
	QueryMode	QuerySort	QueryClear
	RtoLLayout		
DataWindow control functions for TreeView DataWindow	**Supported**		
	Collapse	CollapseAll	CollapseAllChildren
	CollapseLevel	Expand	ExpandAll
	ExpandAllChildren	ExpandLevel	IsExpanded
	SelectTreeNode		
DataWindow control events for TreeView presentation style	**Supported**		
	Collapsing	Collapsed	Expanding
	Expanded	TreeNodeSelecting	TreeNodeSelected
	Unsupported		
	None		
Performance differences between PowerBuilder and mobile	**Limitations**		
	DataWindows in TreeView presentation style are restrained by all limitations for DataWindows in Group presentation style. Collapsing, Collapsed, Expanding, and Expanded events cannot be triggered if the nested TreeView DataWindows. The height for the Tree.level band cannot be negative value. You can not set a column to current column using **SetColumn** function if the column cannot be focused.		

	If the **ScrollNextPage** function is called in the last page, the current row on mobile will be set to the last row. This is different from that in PowerBuilder. On mobile, the **SetSort** function sorts data before groups data. This is different from that in PowerBuilder.
Event sequence difference	**Difference**
	The TreeNodeSelecting, TreeNodeSelected, RowFocusChanging and RowFocusChanged events cannot be triggered in the preview mode. Selecting Tree Node on mobile will sequentially trigger the events TreeNodeSelecting, TreeNodeSelected, RowFocusChanging, RowFocusChanged. Clicking the TreeView DataWindow on mobile will trigger the following events in sequence: LButtonDown, RowFocusChanging, RowFocusChanged, TreeNodeDelecting and TreeNodeSelected. On mobile calling **ScrollNextPage** function will trigger the following event in sequence: Rowfocuschanging, Rowfocuschanged, and ScrollVertial. Collapsing or expanding the tree node will trigger the collapsing(/expanding), collapsed(/expanded) and Resize events on mobile in sequence. Do not assign values to rows in the grouping column in a loop. You can use dot notation to directly assign values to corresponding rows.

9.4 Dynamic DataWindow

DataWindow objects and all entities in them have a set of properties. You can look at and change the values of these properties during execution using DataWindow methods or property expressions. You can also create DataWindow objects during execution. Appeon supports dynamically creating DataWindows with the following presentation style: FreeForm, Tabular, Grid, Graph, CrossTab, N-Up, Label, Composite, Group, TreeView. However, dynamically created RichText DataWindow is unsupported. Also DataWindow cannot be dynamically created if the database type is Informix.

Important: Configuration required for supporting dynamic DataWindows

Configuration at the database server is required for support of dynamic DataWindows: go to the %Appeon_Server_Installation_Path%\appeon\sql\dynamicsql folder, and execute the SQL file started with "install_" for the database you are using, for example, execute install_appeon_syntaxfromsql_ORACLE.sql for the Oracle database.

You can uninstall the SQL files and disable the support of dynamic DataWindows by running the SQL files started with "uninstall_" in the same folder, for example, execute uninstall_appeon_syntaxfromsql_ORACLE.sql for the Oracle database.

Note that you should execute the SQL statement in the database console and executing it in PowerBuilder may cause errors.

Notes:

1. When installing or uninstalling the Appeon-provided SQL files, you must use the corresponding SQL executing tool of each database. Some databases are listed below with the tool they provided. If your database is not listed below, please check the corresponding database documentation.

   Table 9.7:

ASA/SQL Anywhere	Interactive SQL
SQL Server	Query Analyzer
DB2	Command Editor
Oracle	SQLPlus WorkSheet
Sybase IQ	Interactive SQL
SQL Server	Query Analyzer
Teradata	Teradata client tool

2. (**For Teradata only**) Before installing the SQL file install_appeon_syntaxfromsql_teradata.sql for the Teradata database, you will need to:

   a. Copy Appeon_teradata_extfun.jar and install_appeon_userfunction_teradata.sql to the machine where the Teradata database client tool is installed.

   b. Open install_appeon_userfunction_teradata.sql and modify the first line to point to the physical path of Appeon_teradata_extfun.jar.

   c. Execute install_appeon_userfunction_teradata.sql via the Teradata client tool.

3. After installing the SQL files, you should restart Appeon Server or redeploy the application to disable the caches.

4. When you use the transaction SyntaxFromSQL method, please note the following differences between PowerBuilder and mobile:

   - The length of return value on mobile is different from PowerBuilder, because the return value on mobile carries the names of all columns while the return value in PowerBuilder does not.

   - Text, the object keyword, is unsupported if there are calculation involved in SQL statements, For example, "Select emp_ID, emp_Name, salary/12, "Dept="+emp_deptname from employee".

5. When using transaction SyntaxFromSQL method for DB2 on mobile, please note that the generated DataWindow contains no primary key information and cannot be updated on mobile under the following conditions:

   - The database table contains only a simple index.

   - The database table contains a primary key that uses alias.

- Access a table that contains a primary key as the table owner (for example, using SELECT * FROM DB2ADMIN.PUB_T_DEPARTMENT).

Methods of dynamically creating DataWindows

1. Using DataWindow Create method

   Supported syntax:

   ```
   integer dwcontrol.Create (string syntax {,string errorbuffer})
   ```

   Unsupported: Using PBSELECT statement in syntax to create DataWindows is unsupported.

2. Using transaction SyntaxFromSQL method for ASE, ASA/SQL Anywhere, SQL Server and Oracle database type.

   Supported syntax:

   ```
   transaction.SyntaxFromSQL (sqlselect, presentation, err)
   ```

   When you use the transaction SyntaxFromSQL method, please note the following differences between PowerBuilder and mobile: The length of return value on mobile is different from PowerBuilder, because the return value on mobile carries the names of all columns while the return value in PowerBuilder does not.

Note: It is unsupported to dynamically create DataWindow if the column alias specified in the SQL has the same name as the column name in the quoted table. For example, if a table t1 has the column c1, c2 and c3, syntax like "SELECT c1= c2* 10, c3 FROM t1" is unsupported.

Methods of dynamically modifying DataWindow properties

1. Using property expression

   Please refer to DataWindow | DataWindow operators and expressions for detailed information.

2. Using DataWindow Modify function

   Supported syntax: string dwcontrol.Modify(string modstring)

   When you use the Modify function, be aware of that: If the Modify function is used to modify the WHERE clause of the DataWindow object's SQL SELECT statement, make sure that the new SQL SELECT statement is correct in syntax. Otherwise, syntax errors can occur because PowerBuilder does not validate the statement whereas JavaScript does. In Appeon Web, the Modify function cannot be used to modify the database information.

   You should verify that the data types of both sides of the equal symbol in the expression are compatible.

Adding or deleting controls in DataWindow objects

You can use Modify method to create and destroy the controls in a DataWindow object while noting the following issues.

1. When you use this method to adding controls in a DataWindow, the name of the controls should not be same.

2. If it is failed to add or delete a control in the DataWindow object, the error message reported on mobile may be different from in PowerBuilder.

9.5 DataWindow operators and expressions

Table 9.8:

DataWindow operators	**Supported**
	Arithmetic operators: +, -, *, /, ( ), ^ Relational operators: =, >, <, <>, >=, <=, BETWEEN...AND, IN, LIKE, and any of these operators in combination with NOT Logical operators for all data types: NOT, AND, OR Concatenation for string data types: +
	Unsupported
	Subtraction (-). The setting of the DashesInIdentifiers property is ignored. For example, "A-B" always means subtract B from A.
Operator precedence in DataWindow expressions	**Difference from PowerBuilder**
	The precedence of "AND" is higher than that of "OR" (in PowerBuilder, "AND" and "OR" have the same precedence). The operators >, <, <=, >= are of higher precedence than = and <> (in PowerBuilder, the operators >, <, <=, >=, =, <> are of the same precedence). Note: You can use parentheses to make sure the application has correct precedence effect as in the PowerBuilder application Original expression: *a OR b AND c* Modified expression: *(a OR b) AND c*
Supported & Unsupported expressions	**Supported**
	Conditional expressions for property values (such as Visible, X, Y, Width, Height, BackgroundColor, TextColor) Expressions for computed fields Validation rules Filter and sort criteria Note: The information on the limitations for these types of expressions is provided in the Specific Requirements for Using Expressions.
	Unsupported
	Series and values in graphs Columns, rows, and values in crosstabs

Functions used in DataWindow expressions	Supported	
	Abs	Acos
	Asc	Asin
	Atan	Avg
	Bitmap	Ceiling
	Describe	Char
	Case	Cos
	Count	CrosstabAvg
	CrosstabCount	CrosstabMax
	CrosstabMin	CrosstabSum
	CumulativePercent	CumulativeSum
	CurrentRow	Date
	DateTime	Day
	DayName	DayNumber
	DaysAfter	Exp
	Fact	Fill
	First	GetText
	GetRow	Hour
	If	Int
	Integer	IsDate
	IsNull	IsNumber
	IsRowModified	IsRowNew
	IsSelected	IsTime
	Last	Large
	LastPos	Left
	LeftTrim	Len
	Log	LogTen
	Long	LookUpDisplay
	Lower	Match
	Max	Median
	Mid	Min
	Minute	Mod
	Month	Now
	Number	Page
	PageCount	Percent
	Pi	Pos

	Rand	Real
	RelativeDate	RelativeTime
	Replace	RGB
	Right	RightTrim
	Round	RowCount
	Second	SecondsAfter
	Sign	Sin
	RowHeight	Small
	Space	Sqrt
	Stdevp	Stdev
	String	Sum
	Tan	Time
	Today	Trim
	Truncate	Upper
	WordCap	Year
	In addition to the above functions, **User functions** can be used in DataWindow expressions.	
	Unsupported	
	Mode	PageAcross
	PageCountAcross	ProfileInt
	ProfileString	Var
	VarP	
	In addition to the above functions, **System functions** and **External functions** cannot be used in DataWindow expressions.	

9.5.1 Specific Requirements for Using Expressions

Rule for all DataWindow expressions

1. Expressions involving Null values may arrive at different values in JavaScript from their values in PowerScript. For more details, please refer to the Null Values section.
2. Expressions cannot contain "~~t".
3. Expressions cannot be used in cursor or stored procedure arguments.
4. For nested structures, please verify that:
   - It is supported to have single quotes nested with single quotes or double quotes nested with single quotes.
   - It is unsupported to have single quotes nested with double quotes or double quotes nested with double quotes.

- A multi-layer nested structure may cause problems.

5. If using user-defined global functions in DataWindow expressions,

   - Arguments and returned values can only be simple data tapes: Int/Integer, Boolean, String, Character, Long, UnsignedLong, UnsignedInteger.
   - Arguments cannot be references.
   - If the computed field expression is a computed field or global function, the formatting for the computed field will not take effect on mobile.

Sort and Filter expressions

1. Unsupported functions: Avg, Count, Max, Min & Sum.
2. Behavioral difference: In a mobile application, if a Find, Filter or Sort expression contains any special characters (for example, ".", "", "/"), the execution result may differ from PowerBuilder. In a mobile application, the DataWindow rows may display in a different order from PowerBuilder.

Property expressions

1. Overlapped quotes, for example, "sdf~"sdf", "dfg'sdf".
2. In the mobile application, modifying a DataWindow property in a DataWindow expression may conflict with the settings in the application's source code.

String expressions

Operands in the string expression cannot a mix of constants and variables.

Decimal Precision in DataWindow expression

28-digit Decimal is only supported in the following DataWindow expressions: Abs, Avg, CumulativeSum, Median, Sign, and Sum.

9.6 DataWindow object and the properties

9.6.1 DataWindow object

Table 9.9:

Controls in a DataWindow	**Supported & Unsupported**	
	Refer to the Controls in a DataWindow and their properties section for details.	
Column edit styles	**Supported**	
	CheckBox	DropDownDataWindow
	DropDownListBox	Edit
	RadioButtons	

	Unsupported	
	InkEdit	RichText
	EditMask	
DataWindow bands	**Supported**	
	All DataWindow bands, including Header band, Detail band, Summary band, Footer band, Trailer band, and Tree.Level band are supported. All DataWindow bands can contain any supported control.	
	Unsupported	
	The height of the Header band cannot be smaller than 0. The header and footer bands are unsupported in the DataWindow with the RichText presentation style.	
	Notes	
	1. Do not use the band name as the name of the DataWindow object, otherwise the execution result on mobile will be different from that on PowerBuilder. 2. If the content in the summary band cannot be displayed fully on the last page of the deployed DataWindow, an additional page will be displayed to show the rest of the content.	
Other	**Supported**	
	DataWindows that contain Blob columns are unsupported.	

9.6.2 DataWindow object properties

Table 9.10: Properties

Support Level	Feature Name	Description
Supported	Attributes	
Supported	Bandname.property	(r/w): Detail.Color, Detail.Height, Detail.Height.Autosize, Detail.Pointer, Footer.Color, Footer.Height, Footer.Pointer, Header.Color, Header.Height, Header.Pointer, Summary.Color, Summary.Height, Summary.Pointer, Trailer.Color, Trailer.Height, Trailer.Pointer, Height.Autosize
Supported	Bandname.Text	
Supported	Bands	
Supported	BitmapName	
Supported	Color	
Supported	Column.count	
Supported	Crosstab.property	(r/w): Crosstab.SourceNames

Support Level	Feature Name	Description
		(r): Rows, Columns, Values, StaticMode, CrossTabData
Supported	Data	
Unsupported	Data.HTML.Table	
Supported	Data.XML	
Supported	Data.XMLDTD	
Supported	Data.XMLSchema	
Unsupported	Data.XMLWeb	
Unsupported	Data.XSLFO	
Supported	FirstRowOnPage	
Unsupported	Font.Bias	
Supported	Grid.ColumnMove	
Supported	Grid.Lines	
Unsupported	Help.property	
Unsupported	HideGrayLine	
Unsupported	HorizontalScrollMaximum	
Unsupported	HorizontalScrollMaximum2	
Unsupported	HorizontalScrollPosition	
Unsupported	HorizontalScrollPosition2	
Unsupported	HorizontalScrollSplit	
Unsupported	HTMLDW	
Supported	HTMLGen.property	
Supported	HTMLTable.property	
Supported	Label.property	
Supported	LastRowOnPage	
Supported	Message.Title	
Supported	Name	
Supported	Nested	
Supported	Objects	Note: In the mobile application, the returned object names are listed in a different order from that in PowerBuilder.
Unsupported	OLE.Client.property	
Partially Supported	Pointer	See Common Features for details.
Unsupported	Print	
Supported	Print.Buttons	

Support Level	Feature Name	Description
Supported	Print.Preview.Buttons	
Unsupported	Print.Preview.Rulers	
Supported	Print.property	Supported (r/w): Color, Collate, Columns, Columns.Width, Copies, CustomPage.Width, CustomPage.Length, DocumentName, Duplex, Filename, Margin.Bottom, Margin.Left, Margin.Right, Margin.Top, Orientation, Page.Range, Page.RangeInclude, Paper.Size, Paper.Source, Preview, Preview.Zoom, PrinterName, Prompt, Quality, Scale Notes: 1. When Paper.Size is the default value (0), in PowerBuilder application, the default paper size for the printer will be used for the output; while in Appeon application, the paper size for the local printer will be used, but if it cannot be obtained, then the monitor screen size (for example 1024x768) will be used. 2. In Appeon application, the Copies property will not take effect and only one copy will be printed. 3. In Appeon application, the Scale property will not take effect and the output always prints as 100% of scale. 4. The value of MarginBottom, MarginLeft, printMarginTop, MarginRight, PreviewZoom, Scale cannot be negative. 5. In PowerBuilder, if a printer driver does not support scaling, scaling is not supported in either DataWindow printing or preview. However, in the same scenario on mobile, scaling can work in DataWindow preview. 6. When executing PDF printing, if the DocumentName is an empty string, on mobile, the DataWindow will be automatically saved as naming DataWindow.pdf. 7. Filename cannot be an empty string.

Support Level	Feature Name	Description
		8. Newspaper Columns Across option under Columns property is supported for all DataWindows except for composite and nested DataWindows. Unsupported: Background, CanUserDefaultPrinter, ClipText, OverridePrintJob, Preview.Background
Supported	Processing	
Supported	QueryClear	
Supported	QueryMode	
Supported	QuerySort	
Supported	ReadOnly	
Unsupported	Retrieve.AsNeeded	
Supported	RichText.property	
Unsupported	Row.Resize	
Supported	Rows_Per_Detail	
Supported	Selected	
Supported	Selected.Data	
Supported	Selected.Mouse	
Supported	ShowDefinition	
Supported	SlideLeft	
Supported	SlideUp	
Supported	Sparse	
Supported	Storage	
Supported	StoragePageSize	
Supported	Syntax	
Supported	Syntax.Data	
Supported	Syntax.Modified	
Supported	Table.property	
Unsupported	Table.sqlaction.property	
Unsupported	Tooltip.property	
Unsupported	Timer_Interval	
Supported	Units	
Supported	VerticalScrollMaximum	
Supported	VerticalScrollPosition	

Support Level	Feature Name	Description
Supported	Zoom	

9.7 DataWindow data and property expressions

Supported

- The following DataWindow data expressions are supported:

  1. Syntax for one or all data items in a named column

     ```
     dwcontrol.Object.dwcolumnname{.buffer} {.datasource}{[rownum]}
     ```

  2. Syntax for selected data in a named column

     ```
     dwcontrol.Object.dwcolumnname{.Primary}{.datasource}.Selected
     ```

  3. Syntax for a range of data in a named column

     ```
     dwcontrol.Object.columnname{.buffer}{.datasource}[startrow,endrow]
     ```

  4. Syntax for a single data item in a DataWindow

     ```
     dwcontrol.Object.Data {.buffer}{.datasource}[rownum, colnum]
     ```

  5. Syntax for data in a block of rows and columns

     ```
     dwcontrol.Object.Data{.buffer}{.datasource}[startrow,startcol, endrow, endcol]
     ```

  6. Syntax for data in a single row or all rows

     ```
     dwcontrol.Object.Data{.buffer}{.datasource}{[rownum]}
     ```

  7. Syntax for all data from selected rows

     ```
     dwcontrol.Object.Data{.Primary}{.datasource}.Selected
     ```

- The expression for accessing the text displayed in the column header is supported:

  ```
  dwcontrol.Object.ColumnName.Text
  ```

- Basic syntax for DataWindow property expressions is supported:

  ```
  dwcontrol.Object.dwcontrolname{.property}.property{=value}
  ```

- Setting or getting the value of a dot notation is supported, except that there is structure data in the expression

Unsupported

- Getting the data value from a filter buffer according to the row number is unsupported. This is because data is stored in a different order in Appeon than in PowerBuilder. For example, the following script is unsupported:

  ```
  dw_control.object.filter[startrow, startcol, endrow, endcol] //unsupported
  ```

- Setting the value of a dot notation to a structure array, or setting a structure array to a dot notation, is unsupported. For example, the following syntax is unsupported:

```
struct1 t[10]
t = dw_1.object.data[1]
```

  Note: The Appeon Unsupported Features Analysis tool cannot detect unsupported features in DataWindow dot notations. You must make sure the specifications about dot notations are satisfied in the application. Otherwise, it will cause errors. For more information on undetected features, refer to the Undetected Features section.

- Selected and Data are unsupported to be directly accessed by a DataWindow object via the dot notation.

  For example:

  Unsupported script:

```
ldwo_target.Primary = ldwo_column.selected //Unsupported
```

  Supported script:

```
ldwo_target.Primary = dw_1.object.id.selected //Supported
```

- It is unsupported to contain Data in a dot notation to obtain the data of a column. For example:

  Supported example:

```
string ls_an
dwobject dwo
dwo = dw_1.object.id
ls_an = string(dwo.data.primary[1])
```

  Unsupported example:

```
string ls_an
dwobject dwo
dwo = dw_1.object.id
ls_an = string(dwo.primary[1])
```

- It is unsupported to use the following syntax in obtaining data in a row of a report.

  Unsupported script:

```
dw_1.Object.dw_report[1] //Unsupported
```

9.8 DataWindow constants

Supported

In PowerBuilder, constants are defined in the DataWindow control for values of properties and arguments for methods. They are sets of values associated with enumerated data types. Values for enumerated data types always end with an exclamation point. The following list is the PowerBuilder constants Appeon supports:

Table 9.11:

Constant	Supported Values	Unsupported Values
Alignment	Left!	Justify!

	Center! Right!	
Band	Detail! Header! Footer!	None
Border	NoBorder! Box! Lowered! Raised!	ShadowBox! Underline! ResizeBorder!
BorderStyle	StyleBox! StyleLowered! StyleRaised!	StyleShadowBox!
CharSet	CharSetAnsi! CharSetUnicode! CharSetAnsiHebrew! CharSetAnsiArabic!	CharSetDBCS-Japanese!
DWBuffer	Primary! Delete! Filter!	None
DWItemStatus	NotModified! DataModified! New! NewModified!	None Note: It is not recommended to change status in script. Frequent or inappropriate user modification may result in unpredictable problems. The following operation is not recommended for new rows with no specified values for their columns: Changing a row's status from New! to NewModified and updating in script.
SaveAsType	Excel! HTMLTable! PDF! Text! Note: Up to 256 characters are supported and anything larger will be automatically truncated.	CSV!, SYLK!, WKS!, WK1!, DIF!, dBASE2!, dBASE3!, SQLInsert!, Clipboard!, PSReport!, XSLFO!, Excel5!, Excel8!, EMF!, WMF!, XML!

SQLPreview Function	PreviewFunctionRetrieve!	PreviewFunctionReselectRow! PreviewFunctionUpdate!
SQLPreviewType	PreviewSelect!	PreviewInsert! PreviewDelete! PreviewUpdate!

If a constant is set to an unsupported value, Appeon will use the default enumerated value as the constant value. For example, unsupported BorderStyle will be read as NoBorder.

Unsupported

The following constants are not supported:

Table 9.12:

ConnectionSource	DriverType	DWConflictResolution	FillPattern
grColorType	grDataType	grObjectType	grSymbolType
LineStyle	RowFocusInd		

9.9 DataWindow Control

Table 9.13: Events

Support Level	Feature Name	Description
Supported	ButtonClicked	
Supported	ButtonClicking	
Supported	Clicked	
Supported	Collapsed	
Supported	Collapsing	
Supported	Constructor	
Supported	DBError	The sqlsyntax and buffer arguments do not work in the DBError event. The GetSQLPreview function will be ignored if used in the DBError event.
Supported	Destructor	
Supported	DoubleClicked	
Supported	DragDrop	
Supported	DragEnter	
Supported	DragLeave	
Supported	DragWithin	
Supported	EditChanged	
Unsupported	Error	
Supported	Expanded	

Support Level	Feature Name	Description
Supported	Expanding	
Supported	GetFocus	
Unsupported	Help	
Supported	ItemChanged	
Supported	ItemError	
Supported	ItemFocusChanged	
Supported	LoseFocus	
Unsupported	Other	
Unsupported	PrintEnd	
Supported	PrintPage	
Unsupported	PrintStart	
Supported	RButtonDown	For more about RButtonDown, see Common Features.
Supported	Resize	
Supported	RetrieveEnd	
Unsupported	RetrieveRow	
Supported	RetrieveStart	
Supported	RowFocusChanged	
Supported	RowFocusChanging	
Unsupported	ScrollHorizontal	
Unsupported	ScrollVertical	
Supported	SQLPreview	
Supported	WSError	

Table 9.14: Functions

Support Level	Feature Name	Description
Supported	AcceptText	
Unsupported	CanUndo	
Supported	CategoryCount	
Supported	CategoryName	
Supported	ClassName	
Supported	Clear	
Supported	ClearValues	
Unsupported	Clipboard	
Supported	Collapse	

Support Level	Feature Name	Description
Supported	CollapseAll	
Supported	CollapseAllChildren	
Supported	Copy	
Supported	CopyRTF	
Supported	Create	
Unsupported	CrosstabDialog	
Supported	Cut	
Supported	DataCount	
Unsupported	DBCancel	
Unsupported	DBErrorCode	
Unsupported	DBErrorMessage	
Supported	DeletedCount	
Supported	DeleteRow	
Supported	Describe	If there is no value for a property in the propertylist argument, Describe returns a question mark (?) in PowerBuilder, but returns the default value (for example, Arrow!) of the property on mobile.
Supported	Drag	For more about Drag, see Common Features.
Supported	Expand	
Supported	ExpandAll	
Supported	ExpandAllChildren	
Supported	ExpandLevel	
Supported	Filter	
Supported	FilteredCount	
Supported	Find	
Supported	FindCategory	
Supported	FindGroupChange	
Supported	FindNext	
Supported	FindSeries	
Unsupported	GenerateHTMLForm	
Unsupported	GenerateResultSet	
Supported	GetBandAtPointer	
Supported	GetBorderStyle	
Supported	GetChanges	
Supported	GetChild	

Support Level	Feature Name	Description
Supported	GetClickedColumn	
Supported	GetClickedRow	In a mobile application, if the user clicks or double-clicks any area within a DataWindow, the GetClickedRow function returns the same value as in PowerBuilder. If the GetClickedRow is called in some control or window for a DataWindow, the return value is different on mobile than in PowerBuilder. For example, if the dw_1.GetClickedRow() function is called in the Clicked event of a CommandButton, it returns -1 in PowerBuilder and 0 on mobile.
Supported	GetColumn	
Supported	GetColumnName	
Unsupported	GetContextService	
Supported	GetData	
Supported	GetDataPieExplode	
Supported	GetDataStyle	
Supported	GetDataValue	
Supported	GetFormat	
Supported	GetFullState	
Supported	GetItemDate	
Supported	GetItemDateTime	
Supported	GetItemDecimal	
Supported	GetItemFormattedString	
Supported	GetItemNumber	
Supported	GetItemStatus	
Supported	GetItemString	
Supported	GetItemTime	
Supported	GetItemUnformattedString	
Unsupported	GetMessageText	
Supported	GetNextModified	
Supported	GetObjectAtPointer	
Supported	GetParent	
Supported	GetRow	
Supported	GetRowFromRowId	
Supported	GetSelectedRow	
Supported	GetSeriesStyle	

Support Level	Feature Name	Description
Supported	GetSQLPreview	
Supported	GetSQLSelect	If the syntax in DataWindow is PBSELECT statement, when calling the GetSQLSelect function, it will still return the PBSELECT statement but not the SQL SELECT statement, which is different from that in PowerBuilder.
Unsupported	GetStateStatus	
Supported	GetText	
Unsupported	GetTrans	
Unsupported	GetUpdateStatus	
Supported	GetValidate	
Supported	GetValue	The *column* argument only works when the edit style of the column is CheckBox, DropDownListBox, Edit, or RadioButton.
Supported	GroupCalc	
Supported	Hide	
Unsupported	ImportClipboard	
Supported	ImportFile	ImportFile & ImportString 1. The *filename* argument of ImportFile function must be a tab-separated file (TXT) or a comma-separated file (CSV). 2. The *importtype* arguments (e.g. Text!, CSV! and XML!) of ImportString function are unsupported. The *importtype* arguments (e.g. Text!, CSV!, XML!, DBase2!, DBase3!) of ImportFile function are unsupported. 3. When using these functions, you should ensure that the data type imported matches the data type that you specified in a DataWindow control, DataStore object or graph control. Otherwise the output on mobile may be different from that in PowerBuilder. For example, if the date type specified in a DataWindow is string, when you import a file with date number (e.g., 2006-08-01), on mobile the date data will be recognized as a string (2006), however in PowerBuilder, it will be recognized as a date data (2006-08-01).

Support Level	Feature Name	Description
Supported	ImportString	Please see the notes for ImportFile.
Supported	InsertDocument	
Supported	InsertRow	
Supported	IsExpanded	
Supported	IsSelected	
Supported	LineCount	
Supported	ModifiedCount	
Supported	Modify	Refer to Dynamic DataWindow.
Supported	ObjectAtPointer	
Unsupported	OLEActivate	
Supported	Paste	
Supported	PasteRTF	
Supported	PointerX	
Supported	PointerY	
Unsupported	Position	
Supported	PostEvent	
Supported	Print	**Mobile platform difference:** Supported in iOS, but unsupported in Android.
Unsupported	PrintCancel	
Unsupported	ReselectRow	
Supported	Reset	The unsupported syntax: Reset(dwcontrol). The supported syntax: dwcontrol.Reset.
Supported	ResetDataColors	
Unsupported	ResetInk	
Unsupported	ResetTransObject	
Supported	ResetUpdate	
Supported	Resize	
Supported	Retrieve	Because Appeon cannot check whether the retrieve result set matches the DataWindow definition syntax, the DBError event will not be triggered.
Supported	RowCount	
Supported	RowsCopy	
Supported	RowsDiscard	For Composite, Group and Label DataWindows, if the current row is the start row, calling RowDiscard will not trigger RowFocusChanged on mobile. This is different from that in PowerBuilder.

Support Level	Feature Name	Description
Supported	RowsMove	Events cannot be triggered while the application moves data within the primary buffer of one DataWindow.

Supported	SaveAs	1. The *saveastype* argument can be TEXT, HTMLTable, PDF, or EXCEL. For the EXCEL format, only up to 256 characters are supported and anything larger will be automatically truncated.
		2. The supported SaveAs syntax:
		`ll_testvalue = dw_test.SaveAs(filename, saveastype, colheading, encoding)`
		The unsupported SaveAs syntax:
		`dw_test.SaveAs()`
		`dw_test.SaveAs([filename, ]graphcontrol[, saveastype, colheading])`
		Note: For Appeon Mobile, when *saveastype* is PDF, the *colheading* and *encoding* arguments will be always executed as **true** and **EncodingANSI!**.
		For example, the following syntax:
		`dw_1.SaveAs( filename, PDF!, false, EncodingUTF16BE! )`
		will be executed as the following:
		`dw_1.SaveAs( filename, PDF!, true, EncodingANSI! )`
		3. If the DataWindow without any data is saved as an HTML file, the header will not be saved in Appeon Mobile, whereas it will be saved on PB.SetSort.
		4. When the file is generated via the SaveAs function on the mobile device, its file name is always in lower case, no matter which case you specify for the file name. This is as designed by Appeon Mobile. And since the mobile OS (such as iOS, Android) uses a case-sensitive file system, therefore, it is recommended you use lower case for the file name when developing an app for the mobile device.

Support Level	Feature Name	Description
		5. The generated file is automatically saved to the "plugin" folder under the current application directory. See "plugin" folder in *Workarounds & API Guide* for more.
Unsupported	SaveAsAscii	When executing the SaveAsAscii function in PowerBuilder, invisible controls which lay in rows will not be saved as empty rows or " " (quotation marks). However, these invisible controls will be ignored on mobile.
Unsupported	SaveAsFormattedText	
Unsupported	SaveInk	
Unsupported	SaveInkPic	
Unsupported	Scroll	
Supported	ScrollNextPage	
Supported	ScrollNextRow	
Supported	ScrollPriorPage	
Supported	ScrollPriorRow	
Supported	ScrollToRow	
Supported	SelectedLength	
Supported	SelectedStart	
Supported	SelectedText	
Supported	SelectTextAll	
Supported	SelectTextLine	
Supported	SelectTextWord	
Supported	SeriesCount	
Supported	SeriesName	
Unsupported	SetActionCode	
Supported	SetBorderStyle	
Supported	SetChanges	
Supported	SetColumn	
Supported	SetDataPieExplode	
Supported	SetDataStyle	
Supported	SetDetailHeight	Setting detail.height.autosize to true after specifying the height by this function, executing Describe returns the auto sized height on mobile. But in PowerBuilder it returns the height specified by this function.

Support Level	Feature Name	Description
Supported	SetFilter	
Supported	SetFocus	
Supported	SetFormat	
Supported	SetFullState	
Unsupported	SetHTMLAction	
Supported	SetItem	
Supported	SetItemStatus	

Supported	SetPosition	The supported syntax:
		`dwcontrol.SetPosition(position {, precedingobject})`
		The position can be ToTop!, ToBottom!, but cannot be Behind!
		The unsupported syntax
		`dwcontrol.SetPosition(objectname, band, bringtofront)`

Supported	SetRedraw	See Common Features.
Supported	SetRow	
Supported	SetRowFocusIndicator	
Supported	SetSeriesStyle	
Supported	SetSort	
Supported	SetSQLPreview	
Supported	SetSQLSelect	If a DataWindow uses a stored procedure as its data source, the SetSQLSelect function cannot be executed for the DataWindow.
Supported	SetTabOrder	
Supported	SetText	
Unsupported	SetTrans	
Supported	SetTransObject	
Supported	SetValidate	
Supported	SetValue	The SetValue column argument only works if the edit style of the column is DropdownListBox.
Supported	SetWSObject	The SetWSObject function is used to set the authentication info for accessing Web service.
Supported	ShareData	ShareData and ShareDataOff 1. Supported: `CONNECT USING SQLCA;`

Support Level	Feature Name	Description

		dw_corp.SetTransObject(SQLCA)
		dw_corp.Retrieve()
		dw_corp.ShareData(dw_emp)
		dw_corp.ShareData(dw_dept)
		... // Some processing
		dw_emp.ShareDataOff( )
		2. In mobile applications, if any data in two data-sharing Group DataWindows are changed, the primary Group DataWindow will be re-grouped and re-sorted automatically, while the secondary Group DataWindow will only be re-grouped.
		3. The row and column status is shared between the primary DataWindow and secondary DataWindow on mobile, although not shared in PowerBuilder.

Supported	ShareDataOff	Please see the notes for ShareData.
Supported	Show	
Supported	ShowHeadFoot	
Supported	Sort	1. Different from the Sort in PowerBuilder, the Sort function on mobile considers the "~" symbol to have precedence over characters. For this reason, the sort result may be a little different in mobile and PowerBuilder applications. 2. In the mobile application, when the user sorts a DataWindow on a specified column, rows containing special characters (e.g. ".", "", "/") will be sorted in different order than in PowerBuilder.
Supported	TextLine	
Supported	TriggerEvent	The following TriggerEvent syntax is unsupported: object1.TriggerEvent (object2, event).
Supported	TypeOf	
Supported	Undo	
Supported	Update	

Table 9.15: Properties

Support Level	Feature Name	Description
Supported	Border	

Support Level	Feature Name	Description
Supported	BorderStyle	BorderStyle is partially supported. For more, see Common Features.
Supported	BringToTop	
Unsupported	ClassDefinition	
Supported	ControlMenu	
Supported	DataObject	
Unsupported	DragAuto	
Unsupported	DragIcon	
Supported	Enabled	
Supported	Height	
Supported	HScrollBar	VScrollBar and HScrollBar will be displayed as the mobile-style scrollbar, rather than the Windows-style scrollbar.
Unsupported	HSplitScroll	
Unsupported	Icon	
Supported	LiveScroll	
Supported	MaxBox	
Supported	MinBox	
Supported	Object	
Supported	Resizable	The Resizable property cannot be dynamically changed. After setting this property to True, setting Border properties will not be effective.
Supported	RightToLeft	
Unsupported	TabOrder	See Common Features.
Supported	Tag	
Unsupported	Title	
Unsupported	TitleBar	
Supported	Visible	
Supported	VScrollBar	VScrollBar and HScrollBar will be displayed as the mobile-style scrollbar, rather than the Windows-style scrollbar.
Supported	Width	
Supported	X	
Supported	Y	

9.10 DataStore Object

Table 9.16: Events

Support Level	Feature Name	Description
Supported	Constructor	
Supported	DBError	
Supported	Destructor	If a non-visual object is a local variable, the Destructor event in the non-visual object cannot be triggered unless there is a Destroy statement for the non-visual object as well.
Unsupported	Error	
Supported	ItemChanged	
Supported	ItemError	
Unsupported	PrintEnd	
Unsupported	PrintPage	
Unsupported	PrintStart	
Supported	RetrieveEnd	
Unsupported	RetrieveRow	
Supported	RetrieveStart	
Supported	SQLPreview	The SQLPreview event can be triggered by Retrieve method, but cannot be triggered by the Update or ReselectRow methods.
Supported	UpdateEnd	
Supported	UpdateStart	
Supported	WSError	

Table 9.17: Functions

Support Level	Feature Name	Description
Supported	AcceptText	
Unsupported	CategoryCount	
Unsupported	CategoryName	
Supported	ClassName	
Supported	ClearValues	
Unsupported	Clipboard	
Unsupported	CopyRTF	
Supported	Create	
Unsupported	CreateFrom	
Unsupported	DataCount	

Support Level	Feature Name	Description
Unsupported	DBCancel	
Supported	DeletedCount	
Supported	DeleteRow	
Supported	Describe	
Supported	Filter	
Supported	FilteredCount	
Supported	Find	
Unsupported	FindCategory	
Supported	FindGroupChange	
Supported	FindRequired	
Unsupported	FindSeries	
Supported	GenerateHTMLForm	
Unsupported	GenerateResultSet	
Unsupported	GetBorderStyle	
Supported	GetChanges	
Supported	GetChild	
Unsupported	GetClickedColumn	
Unsupported	GetClickedRow	
Supported	GetColumn	
Supported	GetColumnName	
Unsupported	GetContextService	
Unsupported	GetData	
Unsupported	GetDataPieExplode	
Unsupported	GetDataStyle	
Unsupported	GetDataValue	
Supported	GetFormat	
Supported	GetFullState	
Supported	GetItemDate	
Supported	GetItemDateTime	
Supported	GetItemDecimal	
Supported	GetItemNumber	
Supported	GetItemStatus	
Supported	GetItemString	
Supported	GetItemTime	
Supported	GetNextModified	

Support Level	Feature Name	Description
Supported	GetParent	
Supported	GetRow	
Supported	GetRowFromRowId	
Supported	GetRowIdFromRow	
Supported	GetSelectedRow	
Unsupported	GetSeriesStyle	
Supported	GetSQLSelect	If the syntax in DataWindow is PBSELECT statement, when calling the GetSQLSelect function, it will still return the PBSELECT statement but not the SQL SELECT statement, which is different from that in PowerBuilder.
Unsupported	GetStateStatus	
Supported	GetText	
Unsupported	GetTrans	
Supported	GetValidate	
Supported	GetValue	The *column* argument works only if the edit style of the column is CheckBox, DropDownListBox, Edit, or RadioButton.
Supported	GroupCalc	
Unsupported	ImportClipboard	
Supported	ImportFile	ImportFile & ImportString 1. The *filename* argument of ImportFile function must be a tab-separated file (TXT) or a comma-separated file (CSV). The *importtype* arguments (e.g. Text!, CSV! and XML!) of ImportString function are unsupported. 2. The *importtype* arguments (e.g. Text!, CSV!, XML!, DBase2!, DBase3!) of ImportFile function are unsupported. 3. When using the three functions, you should ensure that the data type imported matches the data type that you specified in a DataWindow control, DataStore object or graph control. Otherwise the output on mobile may be different from that in PowerBuilder. For example, if the date type specified in a DataWindow is string, when you import a file with date number

Support Level	Feature Name	Description
		(e.g. 2006-08-01), on mobile the date data will be recognized as a string (2006), however in PowerBuilder, it will be recognized as a date data (2006-08-01).
Supported	ImportString	Please see the notes for ImportFile.
Unsupported	InsertDocument	
Supported	InsertRow	
Supported	IsSelected	
Supported	ModifiedCount	
Supported	Modify	If the Modify function is used to modify the WHERE clause of the DataWindow object's SQL SELECT statement, please make sure that the new SQL SELECT statement is correct in syntax. Otherwise, syntax errors can occur on mobile because PowerBuilder does not validate the statement whereas JavaScript does. In Appeon Web, the Modify function cannot be used to modify the database information.
Unsupported	PasteRTF	
Supported	PostEvent	
Supported	Print	**Mobile platform difference:** Supported in iOS, but unsupported in Android.
Unsupported	PrintCancel	
Unsupported	ReselectRow	
Supported	Reset	
Unsupported	ResetDataColors	
Unsupported	ResetTransObject	
Supported	ResetUpdate	
Supported	Retrieve	
Supported	RowCount	
Supported	RowsCopy	
Supported	RowsDiscard	
Supported	RowsMove	Events cannot be triggered while the application moves data within the primary buffer of one DataWindow.
Supported	SaveAs	1. The *saveastype* argument can be TEXT, HTMLTable, PDF*, or EXCEL. For the EXCEL format, only up to 256 characters are supported

Support Level	Feature Name	Description

		and anything larger will be automatically truncated.
		
		2. The supported SaveAs syntax :
		
		`ll_testvalue = ds_test.SaveAs(filename, saveastype, colheading, encoding)`
		
		The unsupported SaveAs syntax:
		
		`ds_test.SaveAs()`
		
		`ds_test.SaveAs([filename, ]graphcontrol[, saveastype, colheading])`
		
		Note: For Appeon Mobile, when *saveastype* is PDF, the *colheading* and *encoding* arguments will be always executed as **true** and **EncodingANSI!**.
		
		For example, the following syntax:
		
		`ds_1.SaveAs( filename, PDF!, false, EncodingUTF16BE! )`
		
		will be executed as the following:
		
		`ds_1.SaveAs( filename, PDF!, true, EncodingANSI! )`
		
		3. If the DataStore without any data is saved as an HTML file, the header will not be saved in Appeon Mobile, whereas it will be saved on PB.
		
		4. When the file is generated via the SaveAs function on the mobile device, its file name is always in lower case, no matter which case you specify for the file name. This is as designed by Appeon Mobile. And since the mobile OS (such as iOS, Android) uses a case-sensitive file system, therefore, it is recommended you use lower case for the file name when developing an app for the mobile device.
		
		5. The generated file is automatically saved to the "plugin" folder under the current application directory. See "plugin" folder in *Workarounds & API Guide* for more.

Unsupported	SaveAsAscii	SaveAsAscii *Retainnewlinechar* argument is unsupported.
Unsupported	SaveAsFormattedText	

Support Level	Feature Name	Description
Supported	SelectRow	
Unsupported	SeriesCount	
Unsupported	SeriesName	
Unsupported	SetBorderStyle	
Supported	SetChanges	
Supported	SetColumn	
Unsupported	SetDataPieExplode	
Unsupported	SetDataStyle	
Supported	SetDetaHeight	
Supported	SetFilter	
Supported	SetFormat	
Supported	SetFullState	
Unsupported	SetHTMLAction	
Supported	SetItem	
Supported	SetItemStatus	
Supported	SetPositon	
Supported	SetRow	
Unsupported	SetSeriesStyle	
Supported	SetSort	Using "desc" or "asc" as the Order will not have any effect. Please use the standard Order value A for ascending or D for descending order.
Supported	SetSQLPreview	
Supported	SetSQLSelect	
Supported	SetText	
Unsupported	SetTrans	
Supported	SetTransObject	
Supported	SetValue	The *column* argument works only if the edit style of the column is DropdownListBox.
Supported	SetWSObject	
Supported	ShareData	
Supported	ShareDataOff	
Supported	Sort	
Supported	TriggerEvent	The following TriggerEvent syntax is unsupported: `object1.TriggerEvent (object2, event)`
Supported	TypeOf	

Support Level	Feature Name	Description
Supported	Update	

Table 9.18: Properties

Support Level	Feature Name	Description
Unsupported	ClassDefinition	
Supported	DataObject	
Supported	Object	

9.11 Controls in a DataWindow and their properties

Supported controls:

- Button control
- Column control
- Computed Field control
- Graph control
- GroupBox control
- Line control
- Oval control
- Picture control
- Rectangle control
- Report control
- RoundRectangle control
- Text control

Unsupported controls:

- InkPicture
- OLE
- TableBlob

Notes:

- Avoid placing controls above or behind other controls in a DataWindow, as overlapping controls are displayed differently in Appeon Mobile than in PowerBuilder. For example, if there is a Text control behind a DropDownDataWindow column in a DataWindow, the DropDownDataWindow field cannot be pulled down correctly.

9.11.1 Button

Table 9.19: Properties

Support Level	Feature Name	Description
Supported	Action	**Supported:** (r/w): User Defined, Retrieve, PageNext, PagePrior, PageFirst, PageLast, Sort, Filter, DeleteRow, AppendRow, InsertRow, Update, SaveRowsAs, Cancel, Preview, PreviewWithRulers, QueryMode, QuerySort, Query, Clear **Unsupported:**: This property cannot be set by using DataWindow expression. Retrieve (Yield) Print
Supported	Attributes	
Supported	Background.property	Fully supported (r/w): Color, Mode This property can be set by using DataWindow expression.
Supported	Band	Supported (r): Band, Background, Foreground
Supported	Color	This property can be set by using DataWindow expression.
Supported	DefaultPicture	This property cannot be set by using DataWindow expression.
Supported	Filename	
Supported	Font.property	**Supported:** (r/w): Charset, Escapement, Face, Family, Height, Italic, Pitch, Strikethrough, Underline, Weight Note: 1) When the value of Escapement is a negative number, the text will not be rotated. 2) The text rotated can be displayed out of the control in PowerBuilder, but not in the mobile application. 3) After rotated, the multiple-line text still displays in multiple lines in PowerBuilder, but displays in one line in Appeon mobile application. **Unsupported:**: Width
Supported	Height	This property can be set by using DataWindow expression.
Unsupported	HideSnaked	
Supported	HTextAlign	

Support Level	Feature Name	Description
Unsupported	Movable	
Supported	Name	
Partially Supported	Pointer	See Common Features for details.
Unsupported	Resizable	
Supported	SlideLeft	
Supported	SlideUp	
Unsupported	SuppressEventProcessing	
Supported	Tag	
Supported	Text	
Supported	Type	
Supported	Visible	This property can be set by using DataWindow expression.
Supported	VTextAlign	
Supported	Width	This property can be set by using DataWindow expression.
Supported	X	This property can be set by using DataWindow expression.
Supported	Y	This property can be set by using DataWindow expression.

9.11.2 Column

Table 9.20: Properties

Support Level	Feature Name	Description
Supported	Accelerator	
Supported	Alignment	**Supported (r/w)**: Left!, Center!, Right! In PowerBuilder, when the edit.password property is YES and the alignment of the column's text is center-aligned, the text is left-aligned when it is being edited. After the editing, the text is center-aligned. In the mobile application, the text is always center-aligned. **Unsupported**: Justify!
Supported	Attributes	
Supported	Background.property	**Supported (r/w)**: Color, Mode
Supported	Band	

Support Level	Feature Name	Description
Supported	BitmapName	Different from PB, Appeon also supports specifying an Internet URL as the column's content when BitmapName is set to Yes.
Supported	Border	**Supported (r/w)**: NoBorder!, Box!, Lowered!, Raised!, ShadowBox!, Underline!, ResizeBorder!
Supported	CheckBox.property	**Supported (r/w):** LeftText, Off, On, Other, Scale, Text, ThreeD, ThreeState **Unsupported:** It is unsupported to dynamically change the edit style of a column by modifying this property.
Supported	Color	Supported (r/w) Set this property using DataWindow expression.

Supported	ColType	Supported (r)
		`dw_control.object.columnname.coltype`
		`dw_control.Describe("columnname.coltype")`

Supported	Criteria.property	

Supported	dbName	Supported (r)
		Example:
		`dw_control.object.columnname.dbName`
		`dw_control.Describe("columnname.dbName")`

Supported	dddw.property	**Supported:** (r/w): AllowEdit, AutoHScroll, AutoRetrieve, DataColumn, DisplayColumn, HscrollBar, Limit, Name, NilIsNull, PercentWidth, Required, UseAsBorder, VscrollBar, Case Lines, ShowList. (r): HSplitScroll The size and font size of DropdownDataWindows are determined by the size of the deployed DataWindow; the width of DropdownDataWindows, if set to be smaller than the column width, will be displayed in the same width as the column. When executing Modify function to change the dddw.property in the mobile application, the value variable must be contained in single quotation marks. For example, Unsupported code:

Support Level	Feature Name	Description

		`dw_1.Modify(""emp_id.dddw.name= dw_dddw_dropdown"")`
		Supported code:
		`dw_1.Modify(""emp_id.dddw.name= 'dw_dddw_dropdown'"")`
		Unsupported:
		It is unsupported to dynamically change the edit style of a column by modifying this property.

Supported	ddlb.property	**Supported:** (r/w): AllowEdit, AutoHScroll, Case, Limit, NilIsNull, Required, ShowList, Sorted, UseAsBorder, VScrollBar **Unsupported:** It is unsupported to dynamically change the edit style of a column by modifying this property.
Supported	Edit.property	**Supported:** (r/w): AutoHScroll, AutoSelect, AutoVScroll, Case *, CodeTable, DisplayOnly, Format, HscrollBar, Limit, Name, NilIsNull, Password, Required, Style, VscrollBar, FocusRectangle, ValidateCode The Case property is used to set the case of characters entered by the user. This property behaves slightly differently between PB and iOS. In PB as well as Android, the character changes its case as soon as it is typed. While in iOS, the character changes case after the text field loses focus. **Unsupported:** Modifying ValidateCode takes no effect. It is unsupported to dynamically change the edit style of a column by modifying this property.
Unsupported	EditMask.property	
Supported	Font.property	**Supported:** (r/w): Charset, Escapement, Face, Family, Height, Italic, Pitch, Strikethrough, Underline, Weight Note: 1) When the value of Escapement is a negative number, the text will not be rotated.

Support Level	Feature Name	Description
		2) The text rotated can be displayed out of the control in PowerBuilder, but not in the mobile application. 3) After rotated, the multiple-line text still displays in multiple lines in PowerBuilder, but displays in one line in Appeon mobile application. **Unsupported:** Width
Supported	Format	**Supported:** Edit
Supported	Height	Set the Height property using a DataWindow expression.
Supported	Height.AutoSize	
Supported	HideSnaked	
Unsupported	HTML.property	
Supported	ID	
Supported	Identity	
Supported	Initial	
Supported	Key	
Supported	LineRemove	
Unsupported	Movable	
Supported	Multiline	
Supported	Name	
Partially Supported	Pointer	See Common Features for details.
Supported	Protect	This property can be set by using DataWindow expression.
Supported	RadioButton.property	**Supported (r/w)**: 3D, Columns, LeftText, Scale It is unsupported to dynamically change the edit style of a column by modifying this property.
Unsupported	Resizable	
Supported	RightToLeft	This property is partially supported. It only supports the right-to-left display of characters.
Supported	SlideLeft	
Supported	SlideUp	
Supported	TabSequence	
Supported	Tag	

Support Level	Feature Name	Description
Supported	Type	
Supported	Update	
Supported	Validation	This property cannot be dynamically changed.
Supported	ValidationMsg	
Supported	Values	This property is supported for columns with the following edit styles: DropDownListBox, CheckBox, and RadioButtons.
Supported	Visible	This property can be set by using DataWindow expression.
Supported	Width	This property can be set by using DataWindow expression.
Supported	Width.Autosize	
Supported	X	
Supported	Y	

9.11.3 Computed Field

Table 9.21: Properties

Support Level	Feature Name	Description
Supported	Alignment	**Supported (r/w)**: Left!, Center!, Right! **Unsupported**: Justify!
Supported	Attributes	
Supported	Background.property	Supported (r/w): Color, Mode
Supported	Band	
Supported	Border	Supported (r/w): NoBorder!, Box!, Lowered!, Raised!, ShadowBox!, Underline!, ResizeBorder!
Supported	Color	Fully supported (r/w) This property can be set by using DataWindow expression.
Supported	ColType	
Supported	Expression	Supported (r/w) Note: 1) After dynamically modifying this property in CrossTab DataWindow, data will be recalculated according to the new expression in the mobile application. In PowerBuilder, the data will not be recalculated. 2) If the expression starts with spaces (for example, ' ' + mail_from), in the mobile application the

Support Level	Feature Name	Description
		computed field value after the spaces always starts in a new line, despite the column height. This is different from PowerBuilder.
Supported	Font.property	**Supported:** (r/w): Charset, Escapement, Face, Family, Height, Italic, Pitch, Strikethrough, Underline, Weight Note: 1) When the value of Escapement is a negative number, the text will not be rotated. 2) The text rotated can be displayed out of the control in PowerBuilder, but not in the mobile application. 3) After rotated, the multiple-line text still displays in multiple lines in PowerBuilder, but displays in one line in Appeon mobile application. **Unsupported:** Width
Supported	Format	Null-format is unsupported; positive-format, negative-format, and zero-format are supported.
Supported	Height	Fully supported (r/w) This property can be set by using DataWindow expression.
Supported	Height.Autosize	
Supported	HideSnaked	
Supported	HTML.property	Supported (r): AppendedHTML, Link, LinkArgs, LinkTarget, ValueIsHTML
Unsupported	Movable	
Supported	Multiline	
Supported	Name	
Partially Supported	Pointer	See Common Features for details.
Unsupported	Resizable	
Supported	SlideLeft	
Supported	SlideUp	
Supported	Tag	
Supported	Type	
Supported	Visible	
Supported	Width	

Support Level	Feature Name	Description
Supported	Width.Autosize	
Supported	X	
Supported	Y	

9.11.4 Graph

Table 9.22: Properties

Support Level	Feature Name	Description
Supported	Attributes	
Supported	Axis	
Supported	Axis.DispAttr	
Supported	Axis.property	
Supported	BackColor	
Supported	Border	
Supported	Category	
Supported	Category.DispAttr	
Supported	Category.property	
Supported	Color	
Supported	Depth	
Supported	Elevation	
Supported	GraphType	**Supported:** (r/w): AreaGraph!, BarGraph!, BarStackGraph!, Bar3DObjGraph!, BarStack3DObjGraph!, Col3DObjGraph!, ColStack3DObjGraph!, ColGraph!, ColStackGraph!, LineGraph!, PieGraph!, ScatterGraph! **Unsupported:**: Area3D!, Bar3DGraph!, Col3DGraph!, Line3D!, Pie3D!
Supported	Height	
Supported	HideSnaked	
Supported	Legend	
Supported	Legend.DispAttr.property	
Unsupported	Movable	
Supported	Name	
Supported	OverlapPercent	

Support Level	Feature Name	Description
Supported	Perspective	
Supported	Pie.DispAttr.fontproperty	
Partially Supported	Pointer	See Common Features for details.
Supported	Range	
Unsupported	Resizable	
Supported	Rotation	
Supported	Series	
Supported	Series.DispAttr	
Supported	Series.property	
Supported	ShadeColor	
Supported	SizeToDisplay	
Supported	SlideLeft	
Supported	SlideUp	
Supported	Spacing	
Supported	Tag	
Supported	Title	
Supported	Title.DispAttr.fontproperty	
Supported	Type	
Supported	Values	
Supported	Values.DispAttr	
Supported	Values.property	
Supported	Visible	
Supported	Width	
Supported	X	
Supported	Y	

9.11.5 GroupBox

Table 9.23: Properties

Support Level	Feature Name	Description
Supported	Attributes	
Supported	Background.property	Fully supported (r/w): Color, Mode
Supported	Band	
Supported	Border	

Support Level	Feature Name	Description
Supported	Color	
Supported	Font.property	**Supported:** (r/w): Charset, Escapement, Face, Family, Height, Italic, Pitch, Strikethrough, Underline, Weight Note: 1) When the value of Escapement is a negative number, the text will not be rotated. 2) The text rotated can be displayed out of the control in PowerBuilder, but not in the mobile application. 3) After rotated, the multiple-line text still displays in multiple lines in PowerBuilder, but displays in one line in Appeon mobile application. **Unsupported:**: Width
Supported	Height	
Supported	HideSnaked	
Unsupported	Movable	
Supported	Name	
Partially Supported	Pointer	See Common Features for details.
Unsupported	Resizable	
Supported	SlideLeft	
Supported	SlideUp	
Supported	Text	
Supported	Type	
Supported	Visible	
Supported	Width	
Supported	X	
Supported	Y	

9.11.6 Line

Table 9.24: Properties

Support Level	Feature Name	Description
Supported	Attributes	
Supported	Background.property	(r/w): Color, Mode

Support Level	Feature Name	Description
Supported	Band	
Unsupported	Movable	
Supported	Name	
Supported	Pen.property	
Partially Supported	Pointer	See Common Features for details.
Unsupported	Resizable	
Supported	SlideLeft	
Supported	SlideUp	
Supported	Tag	
Supported	Type	
Supported	Visible	
Supported	X1, X2	
Supported	Y1, Y2	

9.11.7 Oval

Table 9.25: Properties

Support Level	Feature Name	Description
Supported	Attributes	
Supported	Background.property	Fully supported (r/w): Color, Mode
Supported	Band	
Supported	Brush.property	(r/w): Color, Hatch
Supported	Height	
Supported	HideSnaked	
Unsupported	Movable	
Supported	Name	
Supported	Pen.property	(r/w): Color, Style, Width
Partially Supported	Pointer	See Common Features for details.
Unsupported	Resizable	
Supported	SlideLeft	
Supported	SlideUp	
Supported	Tag	
Supported	Type	

Support Level	Feature Name	Description
Supported	Visible	
Supported	X	
Supported	Y	

9.11.8 Picture

Table 9.26: Properties

Support Level	Feature Name	Description
Supported	Attributes	
Supported	Band	
Supported	Border	
Supported	Filename	
Supported	Height	
Supported	HideSnaked	
Supported	HTML.property	(r): AppendedHTML, Link, LinkArgs, LinkTarget
Supported	Invert	
Unsupported	Movable	
Supported	Name	
Partially Supported	Pointer	See Common Features for details.
Unsupported	Resizable	
Supported	SlideLeft	
Supported	SlideUp	
Supported	Tag	
Supported	Type	
Supported	Visible	
Supported	Width	
Supported	X	
Supported	Y	

9.11.9 Rectangle

Table 9.27: Properties

Support Level	Feature Name	Description
Supported	Attributes	

Support Level	Feature Name	Description
Supported	Background.property	Fully supported (r/w): Color, Mode
Supported	Band	
Supported	Brush.property	(r/w): Color, Hatch
Supported	Height	
Supported	HideSnaked	
Unsupported	Movable	
Supported	Name	
Supported	Pen.property	(r/w): Color, Style, Width
Partially Supported	Pointer	See Common Features for details.
Unsupported	Resizable	
Supported	SlideLeft	
Supported	SlideUp	
Supported	Tag	
Supported	Type	
Supported	Visible	
Supported	X	
Supported	Y	

9.11.10 Report

Table 9.28: Properties

Support Level	Feature Name	Description
Supported	Attributes	
Supported	Band	
Supported	Border	
Unsupported	Criteria	
Supported	DataObject	DataWindows with the following presentation styles cannot be the DataObject: RichText, OLE and TreeView.
Supported	Height	
Unsupported	HideSnaked	
Unsupported	Movable	
Supported	Name	
Supported	Nested Arguments	
Supported	NewPage	

Support Level	Feature Name	Description
Partially Supported	Pointer	See Common Features for details.
Unsupported	Resizable	
Supported	Slideleft	
Supported	SlideUp	
Supported	Tag	
Supported	Trail footer	
Supported	Type	
Supported	Visible	
Supported	X	
Supported	Y	

9.11.11 Rounded rectangle

Table 9.29: Properties

Support Level	Feature Name	Description
Supported	Attributes	
Supported	Background.property	(r/w): Color, Mode
Supported	Band	
Supported	Brush.property	(r/w): Color, Hatch
Supported	Height	
Supported	HideSnaked	
Unsupported	Movable	
Supported	Name	
Supported	Pen.property	(r/w): Color, Style, Width
Partially Supported	Pointer	See Common Features for details.
Unsupported	Resizable	
Supported	SlideLeft	
Supported	SlideUp	
Supported	Tag	
Supported	Type	
Supported	Visible	
Supported	X	
Supported	Y	

9.11.12 Text

Table 9.30: Properties

Support Level	Feature Name	Description
Supported	Alignment	**Supported (r/w)**: Left!, Center!, Right! **Unsupported**: Justify!
Supported	Attributes	
Supported	Background.property	Fully supported (r/w): Color, Mode
Supported	Band	Supported (r): Band Unsupported: Background, Foreground
Supported	Border	Supported (r/w): NoBorder!, Box!, Lowered!, Raised!, ShadowBox!, Underline!, ResizeBorder!
Supported	Color	This property can be set by using DataWindow expression.
Supported	Font.property	**Supported:** (r/w): Charset, Escapement, Face, Family, Height, Italic, Pitch, Strikethrough, Underline, Weight Note: 1) When the value of Escapement is a negative number, the text will not be rotated. 2) The text rotated can be displayed out of the control in PowerBuilder, but not in mobile applications. 3) After rotated, the multiple-line text still displays in multiple lines in PowerBuilder, but displays in one line on mobile. **Unsupported:**: Width
Supported	Height	This property can be set by using DataWindow expression.
Unsupported	Height.AutoSize	
Supported	HideSnaked	
Supported	HTML.property	(r): AppendedHTML, Link, LinkArgs, LinkTarget, ValueIsHTML
Unsupported	Movable	
Supported	Name	
Partially Supported	Pointer	See Common Features for details.
Unsupported	Resizable	
Supported	SlideLeft	

Support Level	Feature Name	Description
Supported	SlideUp	
Supported	Tag	
Supported	Text	
Supported	Type	
Supported	Visible	Fully supported (r/w) This property can be set by using DataWindow expression.
Supported	Width	Fully supported (r/w) This property can be set by using DataWindow expression.
Supported	X	Fully supported (r/w) This property can be set by using DataWindow expression.
Supported	Y	Fully supported (r/w) This property can be set by using DataWindow expression.

9.12 DataWindowChild Object

Table 9.31: Functions

Support Level	Feature Name	Description
Supported	AcceptText	
Supported	ClassName	
Supported	ClassValues	
Unsupported	CrosstabDialog	
Unsupported	DBCancel	
Unsupported	DBErrorCode	
Unsupported	DBErrorMessage	
Supported	DeletedCount	
Supported	DeleteRow	
Supported	Describe	
Supported	Filter	
Supported	FilteredCount	
Supported	Find	
Supported	FindGroupChange	
Supported	GetBandAtPointer	

Support Level	Feature Name	Description
Supported	GetBorderStyle	
Supported	GetChanges	
Supported	GetChild	
Supported	GetClickedColumn	
Supported	GetClickedRow	
Supported	GetColumn	
Supported	GetColumnName	
Unsupported	GetContextService	
Supported	GetFormat	
Supported	GetItemDate	
Supported	GetItemDateTime	
Supported	GetItemDecimal	
Supported	GetItemNumber	
Supported	GetItemStatus	
Supported	GetItemString	
Supported	GetItemTime	
Supported	GetNextModified	
Supported	GetObjectAtPointer	
Supported	GetParent	
Supported	GetRow	
Unsupported	GetRowFromRowID	
Unsupported	GetRowIdFromRow	
Supported	GetSelectedRow	
Supported	GetSQLPreview	
Supported	GetSQLSelect	If the syntax in DataWindow is PBSELECT statement, when calling the GetSQLSelect function, it will still return the PBSELECT statement but not the SQL SELECT statement, which is different from that in PowerBuilder.
Supported	GetText	
Unsupported	GetTrans	
Unsupported	GetUpdateStatus	
Supported	GetValidate	
Supported	GetValue	The column argument works only if the edit style of the column is CheckBox, DropDownListBox, Edit, or RadioButton.

Support Level	Feature Name	Description
Supported	GroupCalc	
Unsupported	ImportClipboard	
Supported	ImportFile	ImportFile & ImportString 1. The *filename* argument of ImportFile function must be a tab-separated file (TXT) or a comma-separated file (CSV). 2. The *importtype* arguments (e.g. Text!, CSV! and XML!) of ImportString function are unsupported. The *importtype* arguments (e.g. Text!, CSV!, XML!, DBase2!, DBase3!) of ImportFile function are unsupported. 3. When using the three functions, you should ensure that the data type imported matches the data type that you specified in a DataWindow control, DataStore object or graph control. Otherwise the output on mobile may be different from that in PowerBuilder. For example, if the date type specified in a DataWindow is string, when you import a file with date number (e.g. 2006-08-01), on mobile the date data will be recognized as a string (2006), however in PowerBuilder, it will be recognized as a date data (2006-08-01).
Supported	ImportString	Please see the notes for ImportFile.
Supported	InsertRow	
Supported	IsSelected	
Supported	ModifiedCount	
Supported	Modify	If the Modify function is used to modify the WHERE clause of the DataWindow object's SQL SELECT statement, please make sure that the new SQL SELECT statement is correct in syntax. Otherwise, syntax errors can occur on mobile because PowerBuilder does not validate the statement whereas JavaScript does. In Appeon Web, the Modify function cannot be used to modify the database information.
Unsupported	OLEActivate	
Unsupported	ReselectRow	

Support Level	Feature Name	Description
Supported	Reset	
Unsupported	ResetTransObject	
Supported	ResetUpdate	
Supported	Retrieve	
Supported	RowCount	
Supported	RowsCopy	
Supported	RowsDiscard	
Supported	RowsMove	

Supported	SaveAs	1. The saveastype argument can be TEXT, HTMLTable, PDF*, or EXCEL. For the EXCEL format, only up to 256 characters are supported and anything larger will be automatically truncated.
		2. The supported SaveAs syntax :
		`ll_testvalue = dwc_test.SaveAs(filename, saveastype, colheading, encoding)`
		The unsupported SaveAs syntax:
		`dwc_test.SaveAs()`
		`dwc_test.SaveAs([filename, ]graphcontrol[, saveastype, colheading])`
		Note: For Appeon Mobile, when *saveastype* is PDF, the *colheading* and *encoding* arguments will be always executed as **true** and **EncodingANSI!**.
		For example, the following syntax:
		`dwc_1.SaveAs( filename, PDF!, false, EncodingUTF16BE! )`
		will be executed as the following:
		`dwc_1.SaveAs( filename, PDF!, true, EncodingANSI! )`
		3. If the DataWindowchild without any data is saved as an HTML file, the header will not be saved in Appeon Mobile, whereas it will be saved on PB.
		4. When the file is generated via the SaveAs function on the mobile device, its file name is always in lower case, no matter which case you

Support Level	Feature Name	Description
		specify for the file name. This is as designed by Appeon Mobile. And since the mobile OS (such as iOS, Android) uses a case-sensitive file system, therefore, it is recommended you use lower case for the file name when developing an app for the mobile device. 5. The generated file is automatically saved to the "plugin" folder under the current application directory. See "plugin" folder in *Workarounds & API Guide* for more.
Supported	ScrollNextPage	
Supported	ScrollNextRow	
Supported	ScrollPriorPage	
Supported	ScrollPriorRow	
Supported	ScrollToRow	
Unsupported	SelectRow	
Unsupported	SetBorderStyle	
Supported	SetChanges	
Supported	SetColumn	
Supported	SetDetaHeight	
Supported	SetFilter	
Supported	SetFormat	
Supported	SetItem	
Supported	SetItemStatus	

Supported	SetPositon	The following syntax is supported:
		`dwcontrol.SetPosition(position {, precedingobject })`
		The position can be ToTop!, ToBottom!, and cannot be Behind!
		The following syntax is unsupported:
		`dwcontrol.SetPosition(objectname, band, bringtofront)`

Supported	SetRedraw	
Supported	SetRow	
Supported	SetRowFocusIndicator	

Support Level	Feature Name	Description
Supported	SetSort	Using "desc" or "asc" as the Order will not have any effect. Please use the standard Order value A for ascending or D for descending order.
Supported	SetSQLPreview	
Supported	SetSQLSelect	
Supported	SetTabOrder	
Supported	SetText	
Unsupported	SetTrans	
Supported	SetTransObject	
Supported	SetValidate	
Supported	SetValue	
Supported	SetWSObject	The SetWSObject function is used to set the authentication info for accessing Web service.
Supported	ShareData	
Supported	ShareDataOff	
Supported	Sort	If the items in a DropDownDataWindow are double-byte (such as, Chinese, Korean, or Japanese), sorting the DropDownDataWindow has a different result from PowerBuilder. This is because the sorting method of PowerScript and JavaScript is different. For example, if the charset is Chinese, PowerScript sorts by the spelling while JavaScript sorts by Unicode.
Supported	TypeOf	
Supported	Update	

Table 9.32: Properties

Support Level	Feature Name	Description
Unsupported	ClassDefinition	

9.13 DataWindow performance considerations

Strong suggestion: reduce usage of DataWindow SQLPreview event

Each time the DataWindow SQLPreview event is triggered, the mobile application will interact with Appeon Server twice, which costs 1-2 seconds. Therefore, Appeon recommends you minimize writing script into the SQLPreview event of the DataWindow.

Suggestion: use Describe and Modify to get and set DataWindow object properties

Dot notation is much less efficient than Describe and Modify functions. In general, the Describe and Modify functions are about two to three times faster than dot notation.

Therefore, Appeon recommends you use Describe function to replace dot notation that gets the DataWindow object properties, and use the Modify function to replace dot notation that sets the DataWindow object properties.

Suggestion: minimize modifying DataWindow DataObject

It takes 0.3 seconds each time the DataObject property of DataWindow/DataStore is modified during application run time. Therefore, modifying the DataObject property frequently could slow down performance significantly. Appeon recommends you minimize modifying the DataObject property.

10 DBParm parameters in Database

Supported

The following DBParm parameters are supported: CommitOnDisconnect, CacheName, DelimitIdentifier, DateTimeAllowed, DisableBind, NCharBind, and TrimSpaces.

1. The data source name for the CacheName parameter is case sensitive in JBoss, JEUS, WebLogic and WebSphere (but not in EAServer or IIS .NET).

2. DisableBind parameter is only supported in ESQL.

3. In PowerBuilder, the data source name only applies when a PowerBuilder NVO is deployed to EAServer. In Appeon, the data source specified applies for the connection of the deployed application to the database. Settings to the other parameters in the script will be ignored.

4. To support DelimitIdentifier parameter, you must set the "Enclose table and column names in double quotes" option in the Appeon Developer | DB Type Profile Configuration page before deployment.

5. If table and column names are keywords that must be enclosed in double quotation marks (with DelimitIdentifier set to "yes"), the SQL statement cannot be a PowerBuilder SELECT statement, otherwise, Save As PDF will fail.

6. The DelimitIdentifier parameter is unsupported when the updated table name of DataWindow contains the owner name. In this case, be sure to clear the "Enclose table and column names in double quotes" check box in Appeon Developer.

7. It is unsupported to dynamically set the DelimitIdentifier parameter. For all supported DBParm parameters (excluding DelimitIdentifier) you can only dynamically set them before executing Connect.

8. NCharBind parameter is only supported in MS SQL Server and only NCharBind = 0 is supported.

Unsupported

Except the parameters above, other DBParm parameters are unsupported.

11 Calling Web Service

Appeon supports the Web services using Apache AXIS2 only. If you are interested to know more about the AXIS2 Web service, you can check this article on the Appeon support portal: http://support.appeon.com/index.php?/Knowledgebase/Article/GetAttachment/73/1667.

Appeon supports to call the Web service through the AppeonWebService object. AppeonWebService is an Appeon customized object, provided in the Appeon Workarounds PBL (see Chapter 2, *Appeon Workarounds PBL Reference* in *Workarounds & API Guide* for details). You can successfully call a Web service via AppeonWebService object in a mobile application, without needing to install any add-on on end users' machine. The Web service call will fail in the client/server PowerBuilder application.

Note: the Web service call is **unsupported** in the offline application.

The following data types are **supported** by the AppeonWebService object:

- Boolean
- Byte
- Char
- Decimal
- Double
- Integer
- Long
- String

And the following data types are **unsupported** by the AppeonWebService object:

- Blob
- Date
- Time
- DateTime

Pass by reference as well as complexed data types such as array, structure etc. are **unsupported** by the AppeonWebService object.

Appeon also supports to call the Web service through the Web Service DataWindow data source provided by PowerBuilder. For details, refer to DataWindow data sources.

12 Undetected Unsupported Features

Appeon provides an Unsupported Features Analysis tool for detecting unsupported features in a PowerBuilder application before generating files for the application. The Unsupported Features Analysis scans each object within a PowerBuilder application for unsupported features and generates a report that, when combined with the this help, provides a foundation for bringing a PowerBuilder application to specification.

The Appeon Unsupported Features Analysis is capable of highlighting the majority of unsupported features contained in the PowerBuilder application; however, there are some features that the Unsupported Features Analysis will not detect, and thus will not list in the Analysis Report. Approximately 5% of PowerBuilder features that are not supported by Appeon may not be detected in the Unsupported Features Analysis.

An application containing unsupported features can still be converted to mobile and work correctly, depending on the type and number of unsupported features. If the mobile application does not work correctly but the Unsupported Features Analysis does not indicate any unsupported features that are likely to cause such a problem, the problem may be caused by an unsupported feature that has not been detected. In this case, it is strongly recommended that you carefully read the undetected features listed below and examine your application to determine if it contains any of these features.

The following are unsupported features that are not detected during Unsupported Features Analysis.

Table 12.1: Undetected features

Naming conventions	• Duplicate object names. No two objects should have the same name in an application, whether they are of the same type or not. The Unsupported Features Analysis cannot detect whether object names are duplicated in an application. • More than one application object. Having more than one application object in an application is unsupported. The Unsupported Features Analysis cannot detect whether more than one application object is present. • Applications named as objects or controls. Application names that have the same name as PowerBuilder control/object types are not supported. The Unsupported Features Analysis cannot detect whether this unsupported issue is present in an application.
Null values	• Unsupported operation • Expressions with Null values
ASCII characters	Vertical tab (~v)
Non-visual UserObject	A NonVisualObject object assigned to an autoinstantiated NVO or an autoinstantiated NVO assigned to a NonVisualObject object.
Variables and constants	• Instance variables have identical names as global variables. • longlong variable

<table>
<tr><td></td><td>• PUBLIC, PROTECTED, PRIVATE qualifier in the variable declaration</td></tr>
<tr><td>Forced conversion</td><td>Forced conversion between types</td></tr>
<tr><td>Window</td><td>Multiple MDI windows in an application.</td></tr>
<tr><td>Overloading, overriding functions</td><td>• Dynamic calling for overloaded functions
• Dynamic calling for overriding functions</td></tr>
<tr><td>Using the return value of some supported functions</td><td>The return value of the Open or OpenSheet functions</td></tr>
<tr><td>Operators</td><td>The operator '^' with embedded SQL statements.</td></tr>
<tr><td>Stored procedure</td><td>• Stored procedures declared in the conditional statement
• DB2 stored procedures
• Stored procedures placed inside an Oracle package
• Oracle stored procedures with Appeon unsupported features</td></tr>
<tr><td>Cursor declare requirement</td><td>• Cursor declared in the conditional statement;
• If a cursor is declared for retrieving rows from table X, the table X (insert, delete, update) is modified during the cursor declare-close period.</td></tr>
<tr><td>Cursor statements</td><td>• UPDATE TableName SetStatement WHERE CURRENT OF CursorName;
• DELETE FROM TableName WHERE CURRENT OF CursorName.</td></tr>
<tr><td>DataWindow expression function</td><td>
<table>
<tr><td>lastpos</td><td>lastposw</td><td>mode</td><td>pageAcross</td><td>pageCount Across</td><td>profileint</td></tr>
<tr><td>profile string</td><td>stdev</td><td>var</td><td>varp</td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>Partially supported features</td><td>Some partially supported features, for example, reading Object.DataWindow.CrossTab.Rows is supported by Appeon, but writing is not, therefore, using DataWindow Modify function or equivalent to write this property cannot be detected by UFA.</td></tr>
<tr><td>User interface interactions</td><td>Unsupported features in the UI such as shortcut key.</td></tr>
<tr><td>Enumerated data type</td><td>Default values of enumerate type variable</td></tr>
<tr><td>Data source</td><td>The data sources of dynamically created DataWindows are stored procedures with input parameters.</td></tr>
<tr><td>Dynamic calls</td><td>• Dynamically call the method of a menu object.</td></tr>
</table>

<table>
<tr><td></td><td>• Dynamically call the method that contains reference arguments.</td></tr>
<tr><td>Others</td><td>• PBX
• PSR, for example: dw.dataobject='*.psr'
• Unsupported DBParm parameters
• Encoding parameter of the Blob functions
• filename & importtype arguments of ImportFile, ImportString, & ImportClipboard (filename can only be a text file (TXT))
• Property defined in the string variable
• Structure member has comment property</td></tr>
<tr><td>System events</td><td>The following are unsupported and undetected system events.
<table>
<tr><td>cbgetcount</td><td>dderequest</td><td>gettext length</td><td>mmmom close</td><td>sbnpageup</td><td>vbxevent12</td></tr>
<tr><td>cbgetcursel</td><td>ddeter minate</td><td>globalrc change</td><td>mmmom done</td><td>sbnsetfocus</td><td>vbxevent13</td></tr>
<tr><td>cbget dropped controlrect</td><td>ddeun advise</td><td>heditctl</td><td>mmmom open</td><td>sbnthumb position</td><td>vbxevent14</td></tr>
<tr><td>cbget droppedstate</td><td>deactivate</td><td>help</td><td>mmwim close</td><td>sbnthumb track</td><td>vbxevent15</td></tr>
<tr><td>cbgeteditsel</td><td>deadchar</td><td>hookrc result</td><td>mmwim data</td><td>sbntop</td><td>vbxevent16</td></tr>
<tr><td>cbgetext endedui</td><td>deleteitem</td><td>hscroll</td><td>mmwim open</td><td>setcursor</td><td>vbxevent17</td></tr>
<tr><td>cbgetitem data</td><td>destroyclip board</td><td>hscrollclip board</td><td>mmwom close</td><td>setfont</td><td>vbxevent18</td></tr>
<tr><td>cbgetitem height</td><td>devmode change</td><td>iconerase bkgnd</td><td>mmwom done</td><td>settext</td><td>vbxevent19</td></tr>
<tr><td>cbgetlbtext len</td><td>drawclip board</td><td>initdialog</td><td>mmwom open</td><td>sizeclip board</td><td>vbxevent20</td></tr>
<tr><td>cbinsert string</td><td>drawitem</td><td>initmenu</td><td>mouse activate</td><td>skb</td><td>vbxevent21</td></tr>
<tr><td>cblimittext</td><td>dropfiles</td><td>initmenu popup</td><td>move</td><td>spooler status</td><td>vbxevent22</td></tr>
<tr><td>cbncloseup</td><td>dwclose dropdown</td><td>keyup</td><td>ncactivate</td><td>syschar</td><td>vbxevent23</td></tr>
<tr><td>cbndblclk</td><td>dwescape</td><td>lbaddstring</td><td>nccalcsize</td><td>syscolor change</td><td>vbxevent24</td></tr>
</table></td></tr>
</table>

cbndelayed recogfail	dwnbackt about	lbdelete string	nccreate	sys command	vbxevent25
cbndrag drop	dwndrop down	lbdir	ncdestroy	sysdead char	vbxevent26
cbndrag enter	dwngraph create	lbfindstring	nchittest	syskeydown	vbxevent27
cbndrag leave	emgetword breakproc	lbfindstring exact	nclbutton dblclk	systemerror	vbxevent28
cbndrag within	emlimittext	lbgetcaret index	nclbutton down	sysykeyup	vbxevent29
cbndrop down	emlinefrom char	lbgetcount	ncmbutton dblclk	tbnmoved	vbxevent30
cbnedit change	emline index	lbgetcursel	ncmbutton down	tcnclicked	vbxevent31
cbneditup date	emline length	lbgeth orizontal extent	ncmbutton up	tcndouble clicked	vbxevent32
cbnendrec	emline scroll	lbgetitem data	ncmouse move	tcndragdrop	vbxevent33
cbnerrspace	emreplace sel	lbgetitem height	ncpaint	tcndragenter	vbxevent34
cbnkillfocus	emscroll	lbgetitem rect	ncrbutton dblclk	tcndragleave	vbxevent35
cbn modified	emsetfont	mbutton down	ncrbutton down	tcndrag within	vbxevent36
cbnrcresult	emset handle	mbuttonup	ncrbuttonup	tcnenterkey	vbxevent37
cbnsel change	emset modify	mdiactivate	nextdlgctl	tcnkeydown	vbxevent38
cbnselend cancel	emsetpass wordchar	mdicascade	omnclose	tcnkillfocus	vbxevent39
cbnselend ok	emsetread only	mdicon arrange	omndata change	tcnrclicked	vbxevent40
cbnsetfocus	emsetrect	mdicreate	omndrag drop	tcnrdouble clicked	vbxevent41
cbreset content	emsetrectnp	mdidestroy	omndrag enter	tcnsel changed	vbxevent42
cbselect string	emsetsel	mdiget active	omndrag within	tcnsel changing	vbxevent43
cbsetcursel	emsettab stops	mdimaxi mize	querynew palette	tcnsetfocus	vbxevent44

	cbseteditsel	emsetword break	mdinext	queryopen	timechange	vbxevent45
	cbsetextend edui	emsetword breakproc	mdirestore	queuesync	tvnenterkey	vbxevent46
	cbsetitem data	emundo	mdiset menu	quit	uondrag drop	vbxevent47
	cbsetitem height	enable	mditile	rcresult	uondrag enter	vbxevent48
	cbshow dropdown	enchange	measure item	renderall formats	uondrag leave	vbxevent49
	changecb chain	endsession	menuchar	render format	uondrag within	vbxevent50
	char	enerrspace	menuselect	renhscroll	uonexternal 01	vkeytoitem
	chartoitem	enhscroll	mmjoy1 buttondown	renvscroll	vbxevent01	vscroll
	child activate	enmaxtext	mmjoy1 buttonup	sbnbottom	vbxevent02	vscroll clipboard
	comm notify	enteridle	mmjoy1 move	sbndrag drop	vbxevent03	windowpos changed
	compacting	enupdate	mmjoy1z move	sbndrag enter	vbxevent04	windowpos changing
	compare item	envscroll	mmmci notify	sbndrag leave	vbxevent05	winini change
	ctlcolor	erasebkgnd	mmmim close	sbndrag within	vbxevent06	Selected
	ddeack	fontchange	mmmim data	sbnend scroll	vbxevent07	OMNDrag Leave
	ddeadvise	getdlgcode	mmmim error	sbnkill focus	vbxevent08	nclbuttonup
	ddedata	getfont	mmmim longdata	sbnline down	vbxevent09	
	ddeexecute	getmin maxinfo	mmmim longerror	sbnlineup	vbxevent10	
	ddepoke	gettext	mmmim open	sbnpage down	vbxevent11	

Index

T

U

V

W