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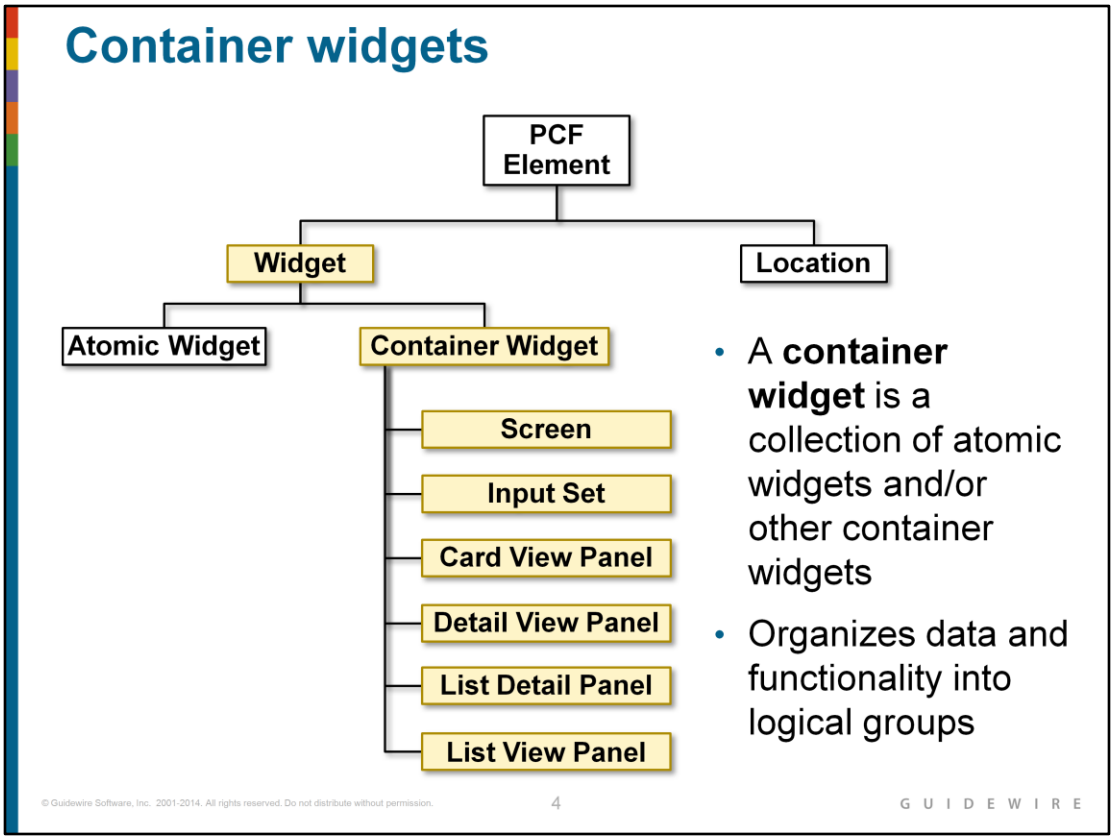
Lesson objectives

- By the end of this lesson, you should be able to:
  - Describe the functionality of list view panels
  - Create a new list view panel
  - Create and modify row iterator, row, and cell widgets
  - Reference list view panels

This lesson uses the notes section for additional explanation and information.
To view the notes in PowerPoint, select View → Normal or View → Notes Page.
When printing notes, select Note Pages and Print hidden slides.

Lesson outline

- List view panel fundamentals
- Create list view panels
- Reference list view panels

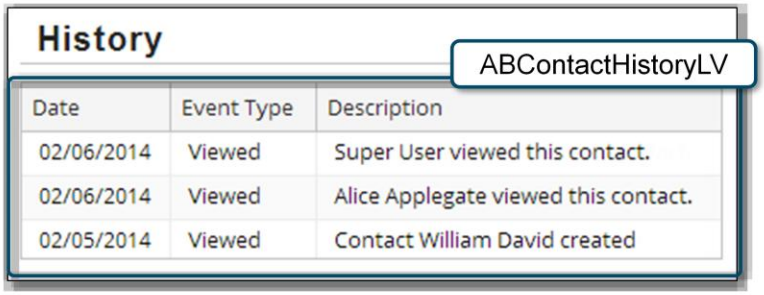


Container widgets hold other widgets. Each one can be defined either in its own file or as a child container within some other PCF element file.

Both Widget and Location are conceptual representations in this diagram. There are no <Widget /> or <Location /> elements. Similarly, both Atomic Widget and Container Widget are conceptual representations. There are no <Atomic Widget /> or <Container Widget /> elements.

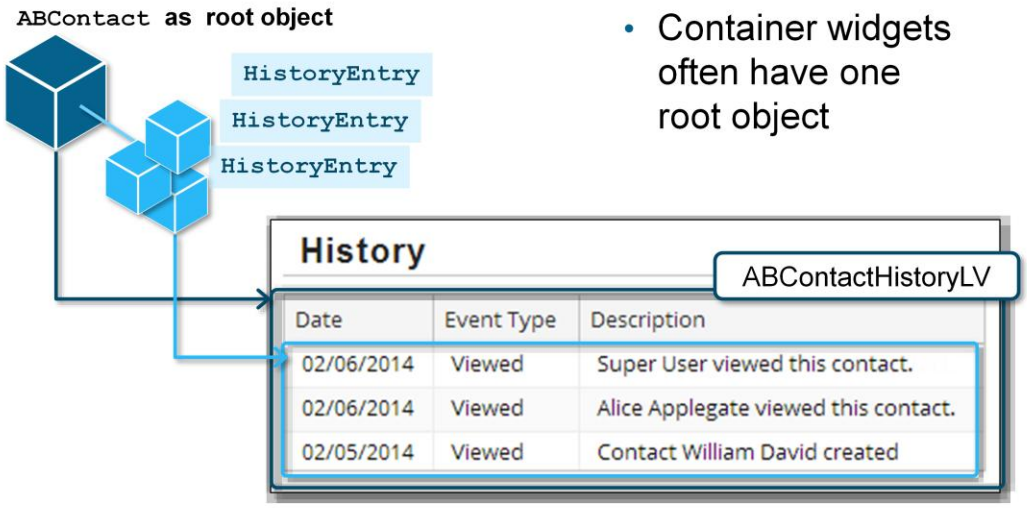
The PCF object model is container-based. Each screen element is modeled as an object, which may contain other objects. The hierarchical structure simplifies the task of locating and modifying visual elements. Furthermore, each element can be declared as an independent and therefore reusable element.

List view panels



- A **list view panel** is a container widget that often displays a set of rows that are related to one object or one query
- Users can view and, in some cases, edit the data

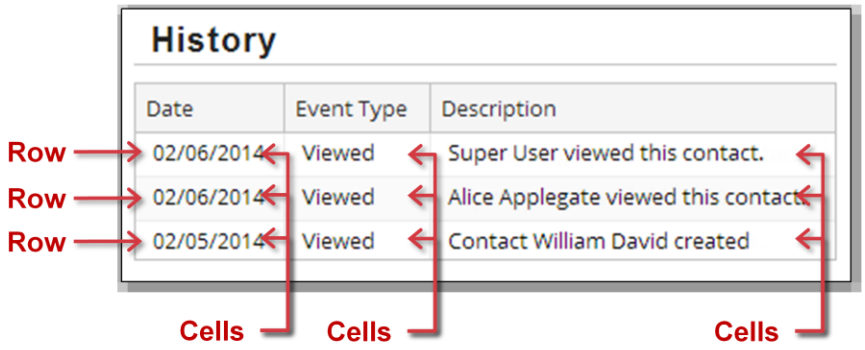
List view panel root objects



- Container widgets often have one root object

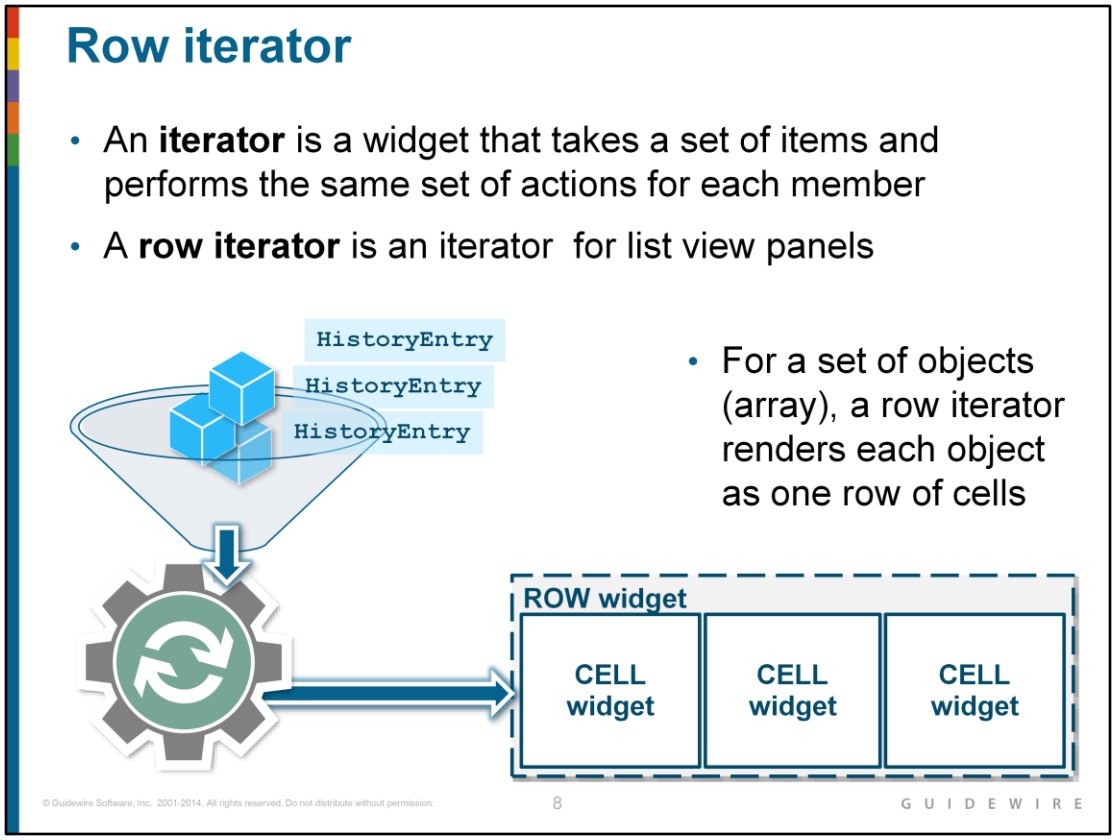
- A **list view panel** can display an array of objects that are associated with the root object

List view panel anatomy



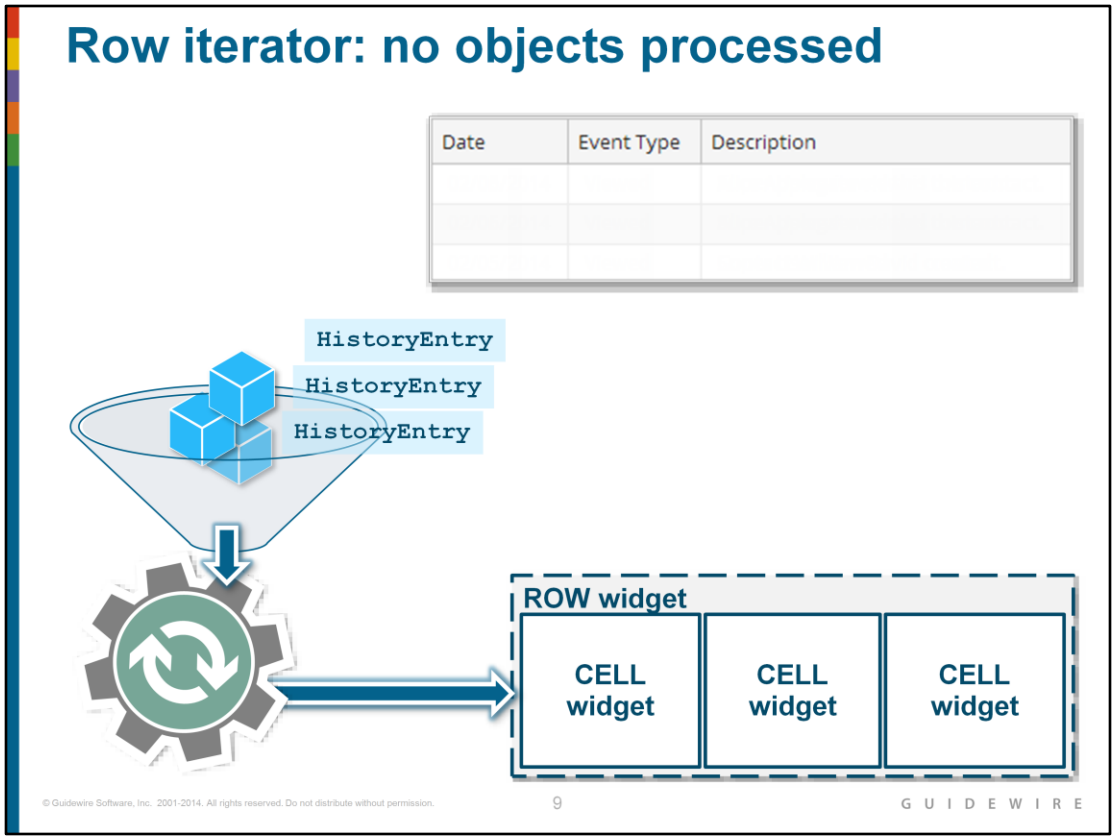
- Cell widgets display individual fields of data
- Row widget organize cells
- Entire structure generated by row iterator

Row widgets organize the layout of the cells for an object instance when the row iterator is manipulating that instance. Row widgets do not perform any "navigation" within the collection of object instances. Adding a second row widget would not display two different objects when the page is rendered, but would arrange the cells for each instance across two rows. The generated markup for a row widget is a <TR> HTML tag.
Row iterators are discussed in the next slide.



The PCF architecture has several different types of iterators, including:

- Menu item iterators, which take a set of objects and generate one menu item for each.
- Panel iterators, which take a set of objects and generate one panel (typically, one detail view) for each.
- PolicyCenter coverage iterators, which take a set of coverages associated with a covered item (such as a vehicle) and generate one coverage input for each coverage.



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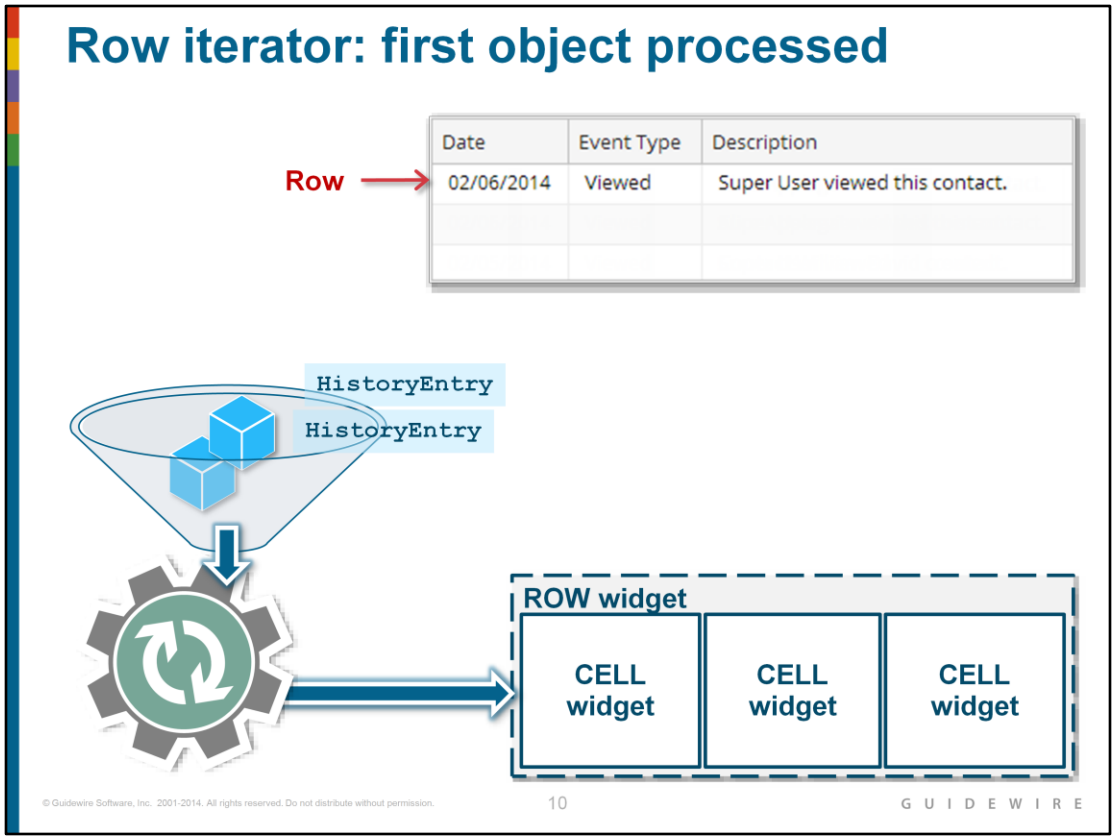

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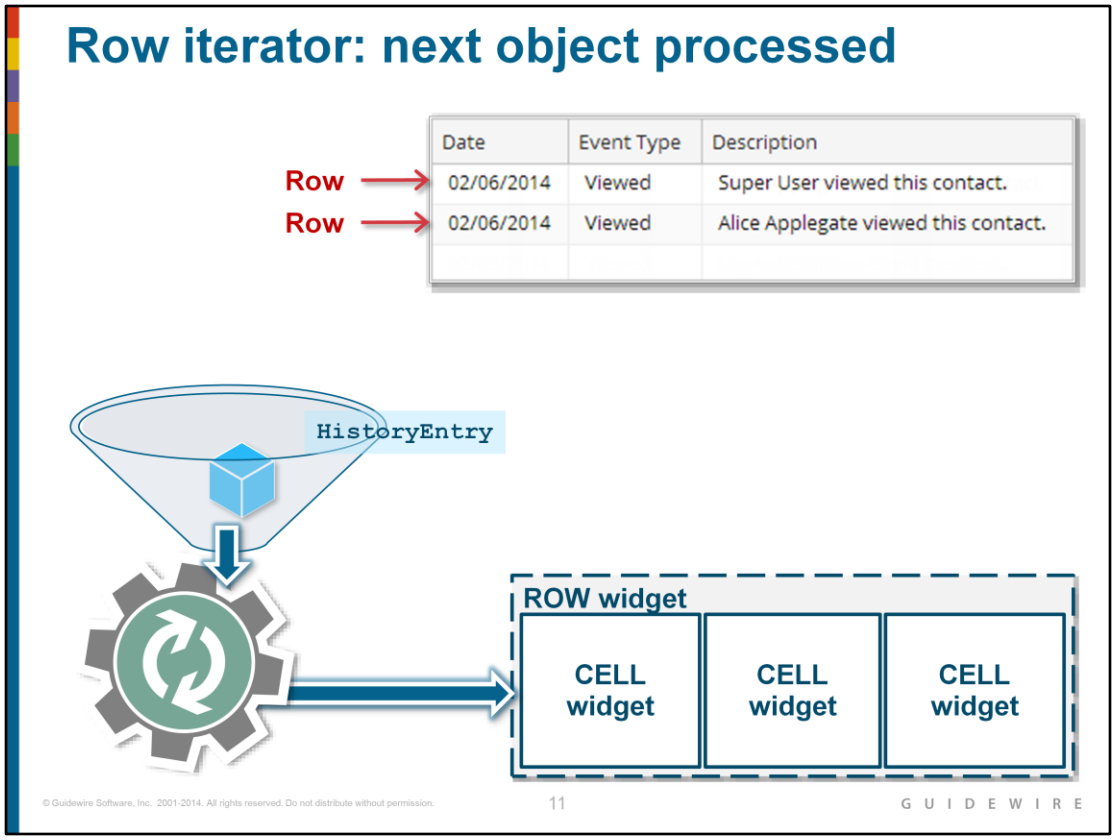

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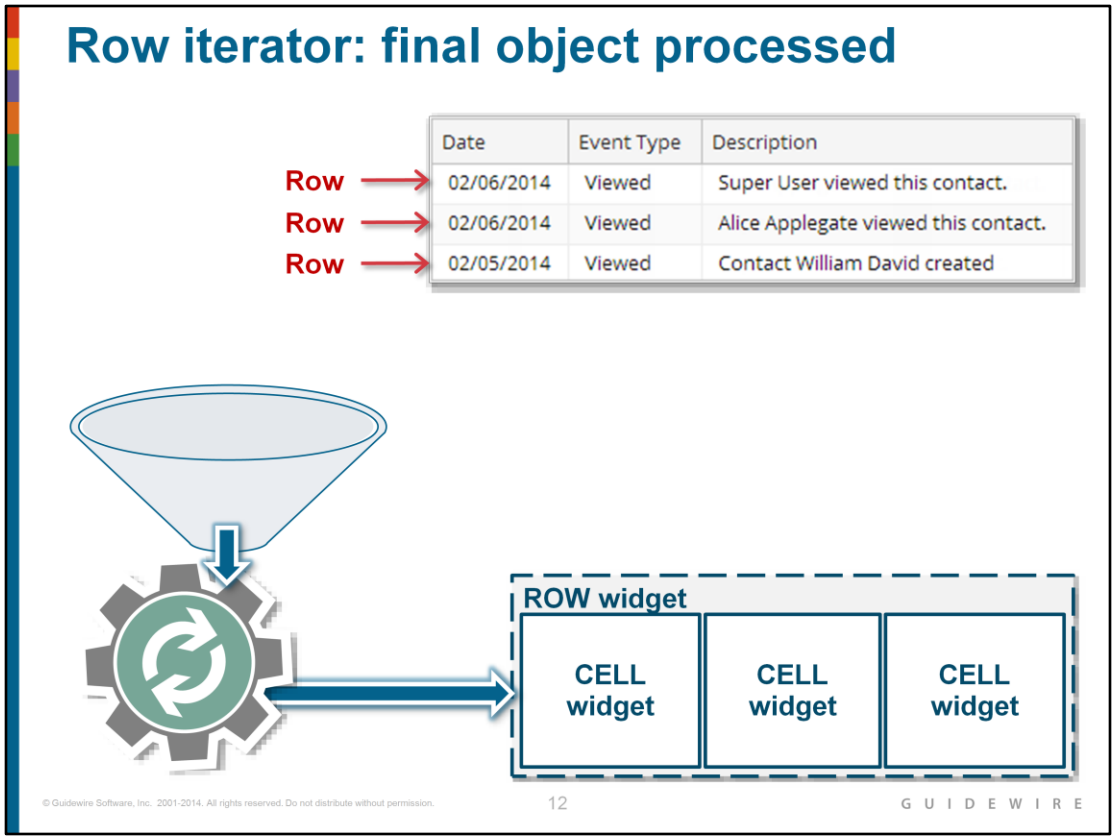

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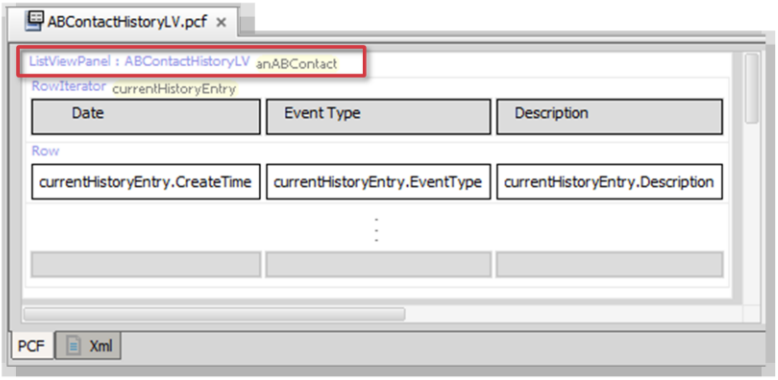
Reusable containers



- PCF file contains a top-level container

- Other PCF files can reference the reusable container
- If the container is likely to be needed in multiple places, create as PCF file for container!

An inline container is not reusable. In the slide example, ABContactHistoryLV is a top-level container. Other containers can therefore reference it. In TrainingApp, the ABContactHistoryPage contains a Screen with a Panel Ref that references ABContactHistoryLV.

File and widget

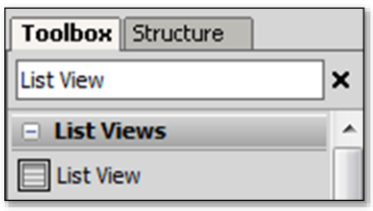
List View Panel PCF file

- <ListViewPanel/> is a top-level PCF element
- File name ends with LV
- Define root object

List View Panel PCF

ListViewPanel widget

- Widget is defined in a Screen, Card View Panel, or a List Detail Panel



It is possible to define a variable for a ListViewPanel widget. In many cases, however, a ListViewPanel widget inherits the root object associated with its parent.

Reusability and inline

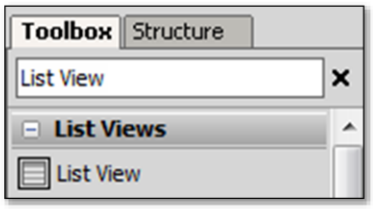
Reusability

- List View Panel is PCF file
- Ideal for multiple references
  - Other PCF files use a reference widget to reference the reusable container

List View Panel PCF

Inline

- Defined as widget
- Single instance usage
  - Not possible to reference in another container



Lesson outline

- List view panel fundamentals
- Create list view panels
- Reference list view panels

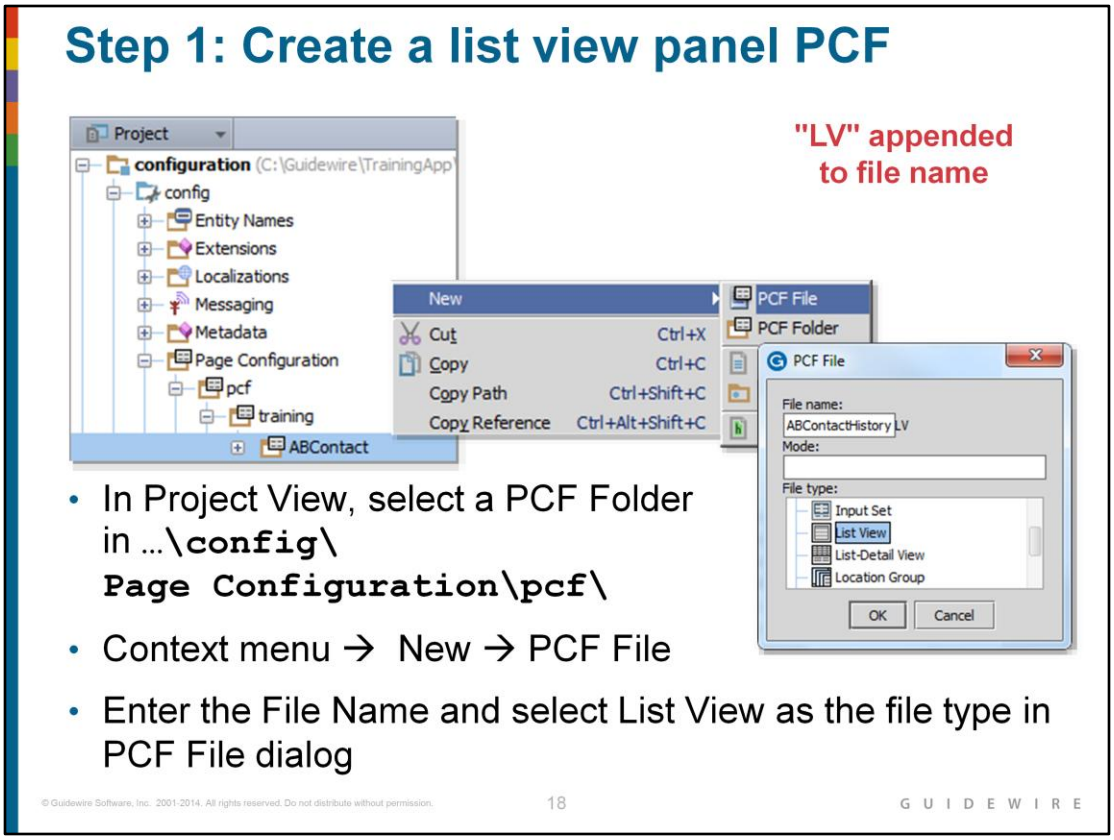
Steps to create a List View Panel PCF

1. Create the List View Panel PCF file
2. Specify the required variables
3. Specify additional properties
4. Add a row iterator
5. Add a row
6. Add cell widgets
7. Deploy PCFs

* Slides do not cover the details of creating an inline List View Panel. See notes.

Inline list view panel

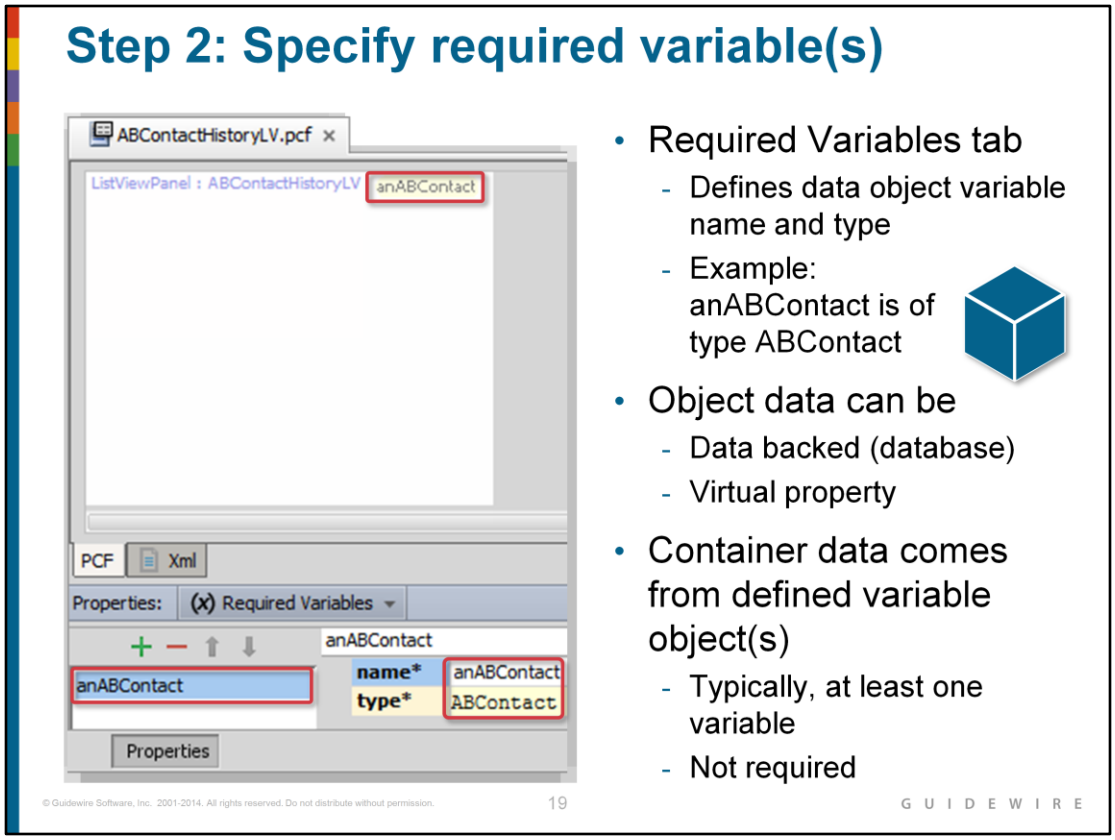
1. Add the ListViewPanel widget to the parent container
2. Optionally specify additional properties
4. Add a row iterator widget
5. Add a row widget
6. Add cell widgets
7. Deploy PCFs



The initial list view panel always displays an error because every list view panel needs a row element. A newly created list view panel is empty.

Inline list view panels

To create an inline list view panel, find the ListViewPanel widget in the PCF Editor toolbox. Drag the ListViewPanel widget onto an existing screen, list detail panel, or card view panel.

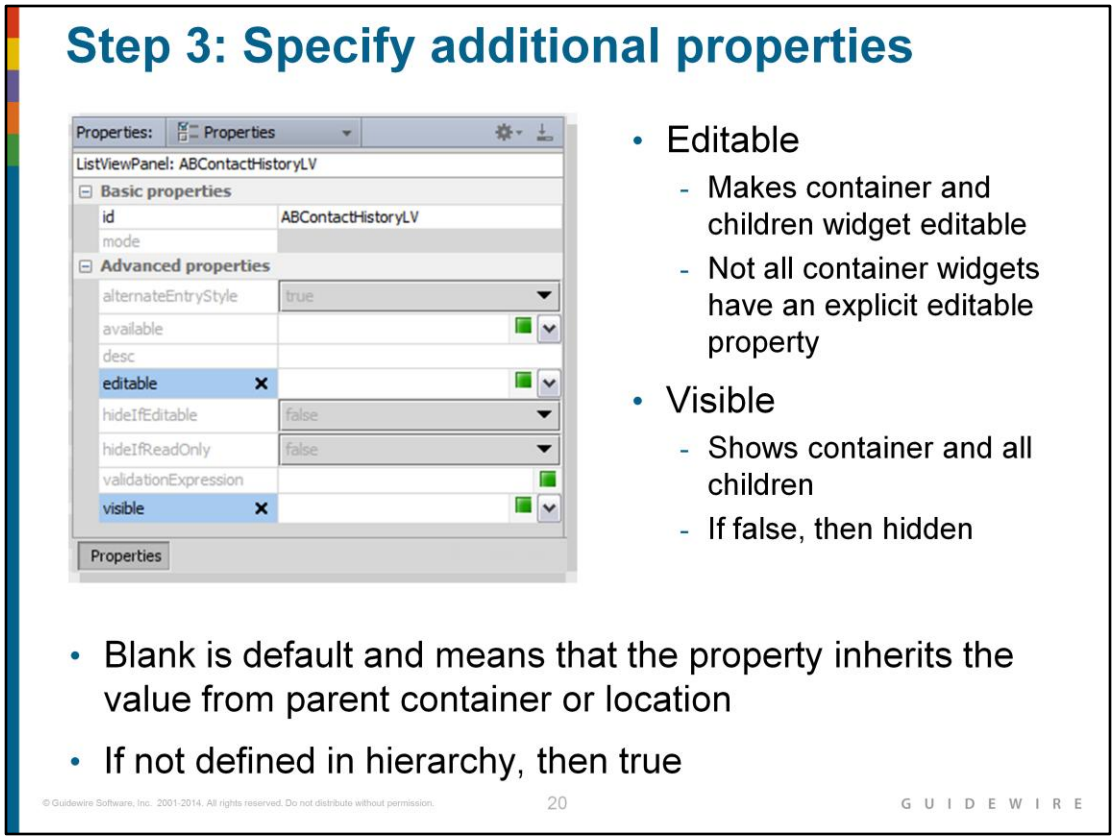


Most container widgets have at least one required object that contains data fields. One way to think of this is that there is at least one root object for a given container. Root objects must be specified on the list view panel's Required Variables tab.

The initial list view panel always displays an error because every list view panel needs a row element. A newly created list view panel is empty. In the slide example, the screenshot has been modified to not show the error.

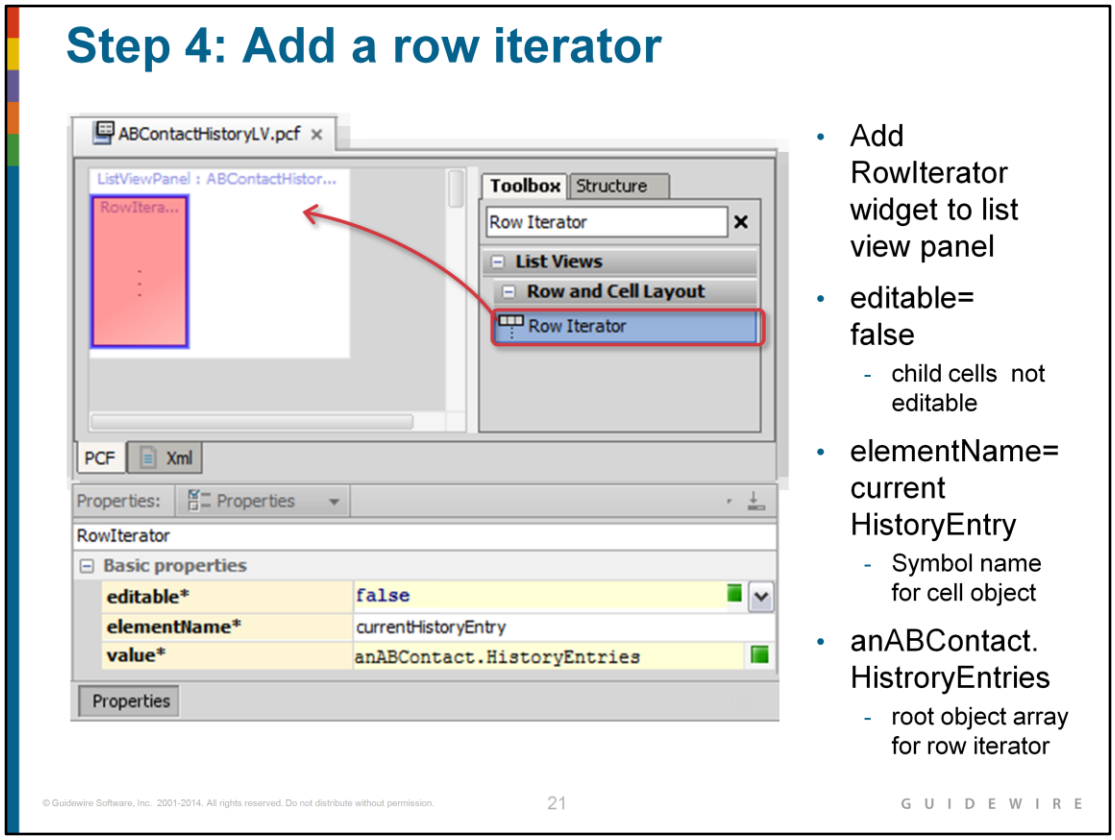
Inline list view panels

You do not need to specify root objects for inline list view panel. Because an inline list view panel can have only one parent container, it automatically inherits the root objects of its parent.



There are two states that a list view panel can be in: edit mode and read-only mode. If the editable property for a list view panel is true (or blank, which defaults to true), then the list view panel can be put into either read-only mode or edit mode. If the editable property for a list view panel is false, then the list view panel cannot be put into edit mode. It is always in read-only mode.

Inline list view panels
This step is the same for standalone and inline list view panels.



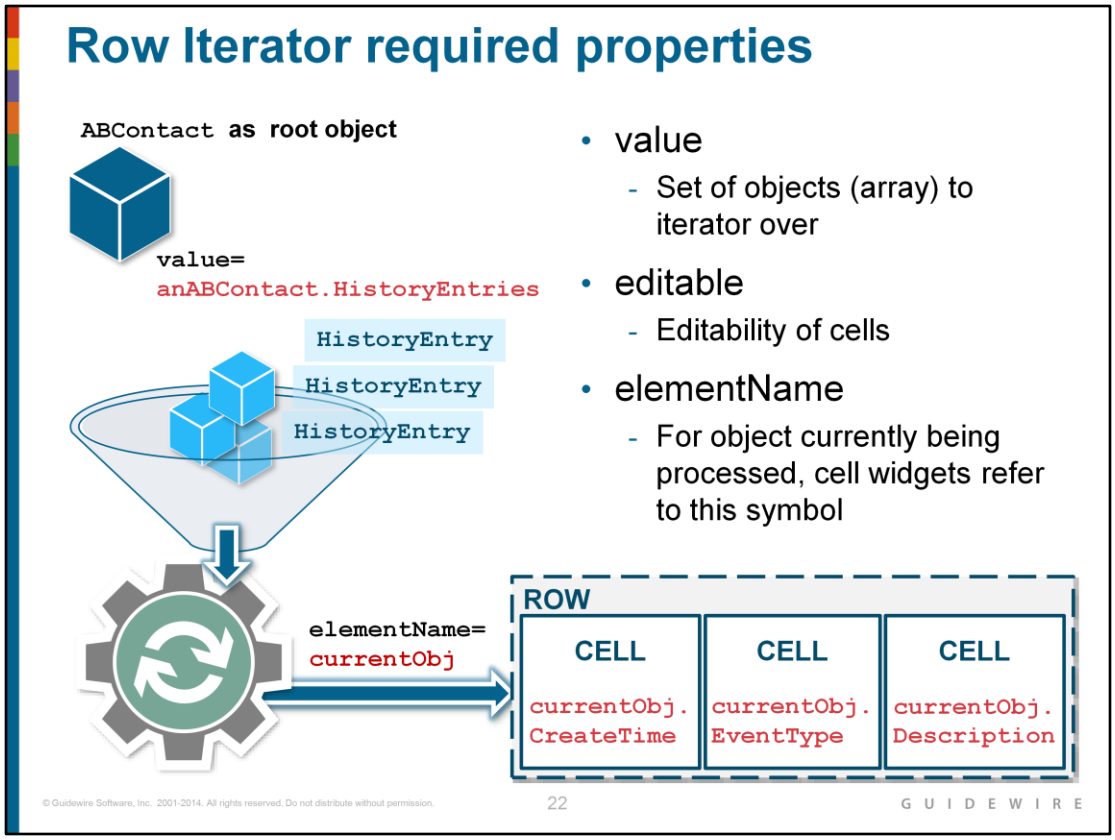
In the slide example, the RowIterator has already been placed in the ListViewPanel in the PCF editor canvas. The Properties window shows the Properties tab. Some attributes in the Basic properties have been removed. An asterisk denotes a required property. RowIterator widgets have three required properties: editable, elementName, and value.

In the slide example…

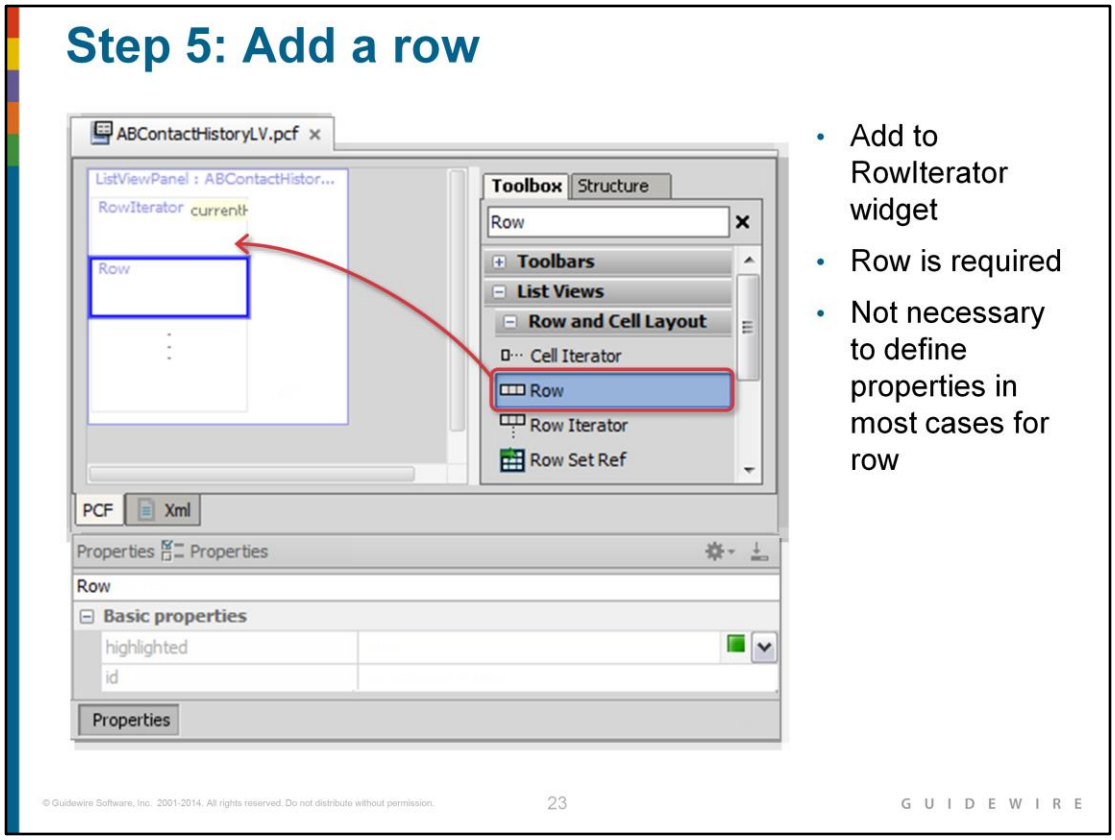
- Editable is false—the cell value cannot be edited.
- The name of the symbol used to reference the object currently being processed is currentHistoryEntry.
- The object set to be processed is anABContact's HistoryEntries array.

Inline list view panels

This step is the same for standalone and inline list view panels.



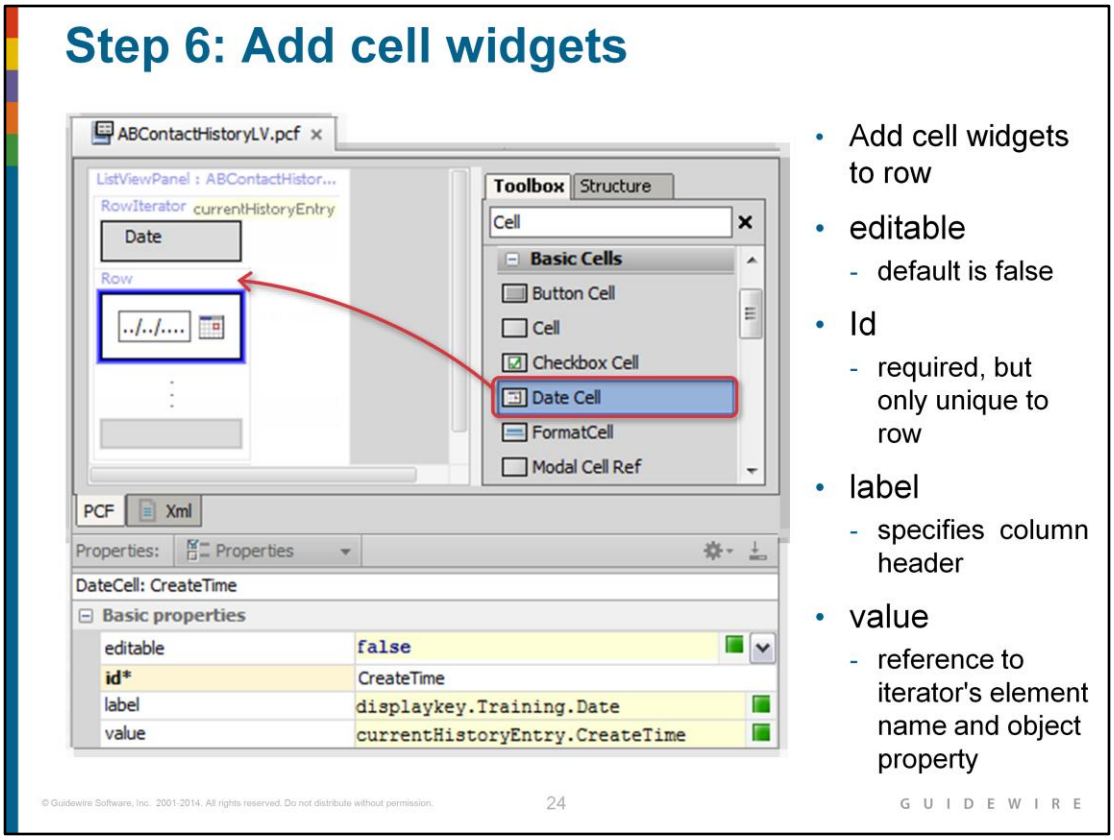
Each cell widget inside the row widget is used to render data for multiple objects. For example, the first cell in the diagram above renders the CreateDate field for all three HistoryEntry objects in the array. The cell widget must therefore be bound to an abstract name that references each object in the array one at a time. The Element Name property of the row iterator defines what this name is. The value you select for the Element Name property is arbitrary, but whatever value you select must be used by the cell widgets in the row iterator. To improve readability, use element names such as "current<object>" or "this<object>".



In the slide example, the Row has already been placed in the Row Iterator in the PCF editor canvas. The Properties window shows the Properties tab.

Inline list view panels

This step is the same for standalone and inline list view panels.



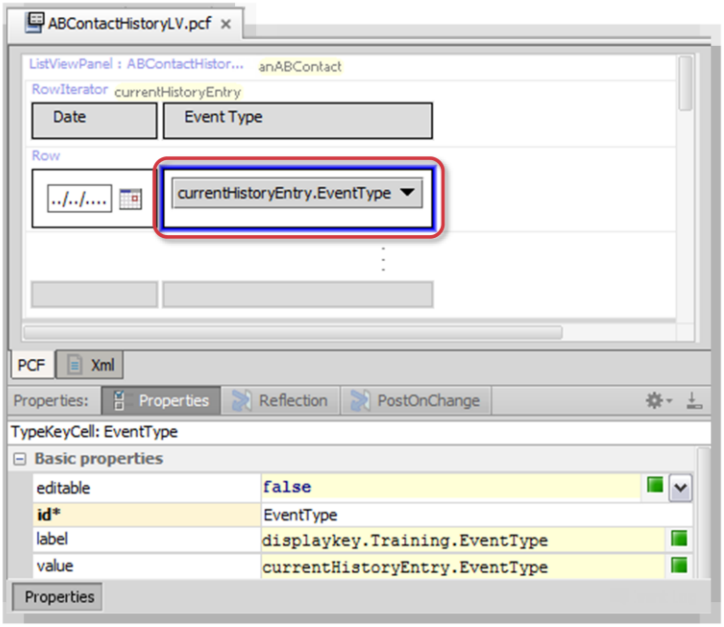
In the slide example, the DateCell widget has already been placed in the Row in the PCF editor canvas. The DateCell widget offers additional formatting options for dates and times.

The Properties window shows the Properties tab. Some attributes in the Basic properties have been removed. An asterisk denotes a required property. Cell input widgets require a unique ID value. However, this value need only be unique to the inputs in the Row.

A cell widget is inside row iterator, which is used to process multiple rows. A cell's value property must reference row iterator's element name. The label property specifies the label for column header.

Inline list view panels
This step is the same for standalone and inline list view panels.

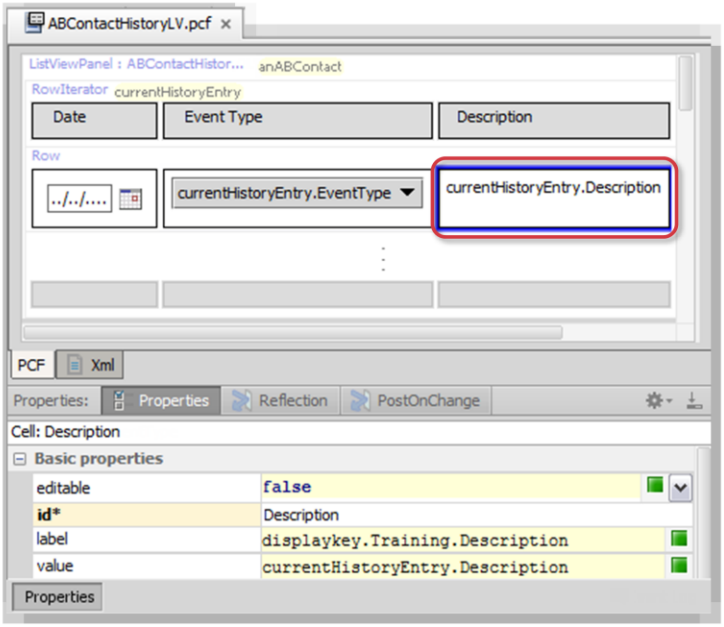
Example: Second cell



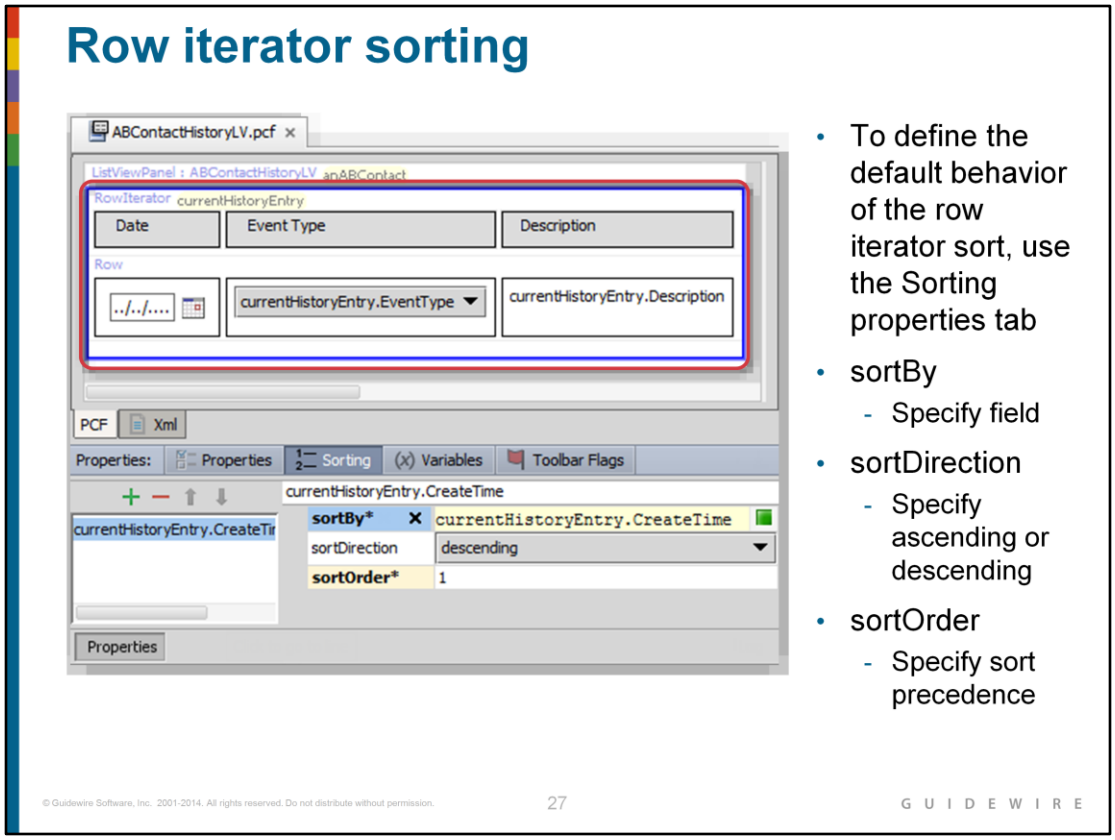
- Add cell to row
  - Order determines default column order
- Cell widget is generic widget that resolves the type
- Use the best widget for data type
- TypeKeyCell widget
  - Binds to a typekey object value

In the slide example, the EventType Cell widget has already been placed in the Row in the PCF editor canvas. The Properties window shows the Properties tab. Some attributes in the Basic properties have been removed. An asterisk denotes a required property. Cell input widgets require a unique ID value. However, this value need only be unique to the inputs in the Row.

Example: Third cell



- Add cell to row
  - Order determines default column order
- Cell widget is generic widget
  - Use the best widget for the field data type
  - Default is to use TextCell



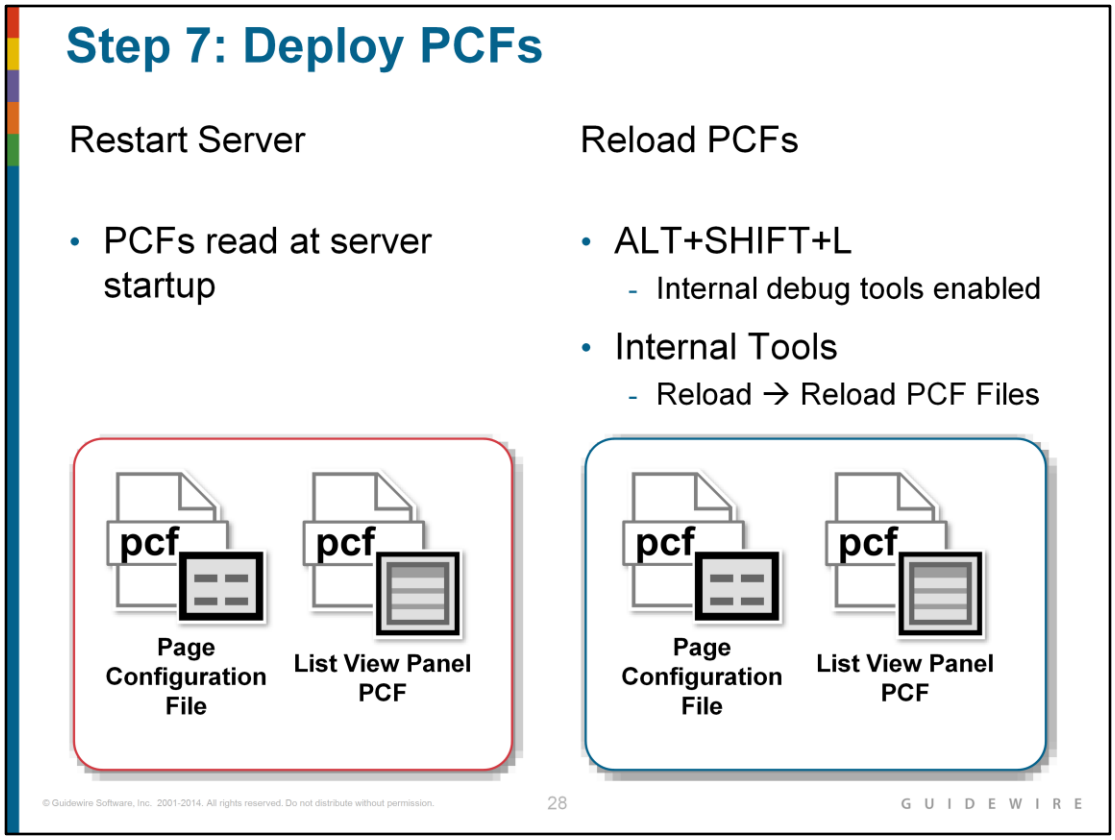
The row iterator can sort the objects (elementName property) in the array (value property). To define the default sorting criteria, use the row iterator Sorting properties tab to specify the sorting criteria.

For each sort criterion, you must specify the sortBy value, the direction of the sort (ascending or descending), and precedence of the criteria (the sortOrder value). It is possible to have multiple sort criterion. If a column has a sort criteria with sort order 1 (and the sortBy column is visible in the list), then it is initially rendered with an up-facing or down-facing arrow head next to the label. The direction of the arrow reflects the sortDirection value. Any criteria with a sort order of 2 or greater are rendered with an up-facing or down-facing double arrow head next to the header label.

For properties that are typecode fields, rows are sorted based on the priority and then name of the typecodes. For example, if a list of buildings includes a "BuildingType" column with possible values of "residential - single dwelling" (priority 10) and "residential - multiple dwelling" (priority 20) and the column has a defined ascending sort order, all "residential - single dwelling" buildings will be listed before any "residential - multiple dwelling" buildings.

You can create sort criterion that reference values not displayed in the list. For example, a list of history entries could be sorted by create date even though the create date isn't displayed in the list.

In order for a user to override the defined sorting criteria for a row iterator, you must configure the enableSort property for a given cell widget. If true, a user can sort the values in the column by clicking the column header.



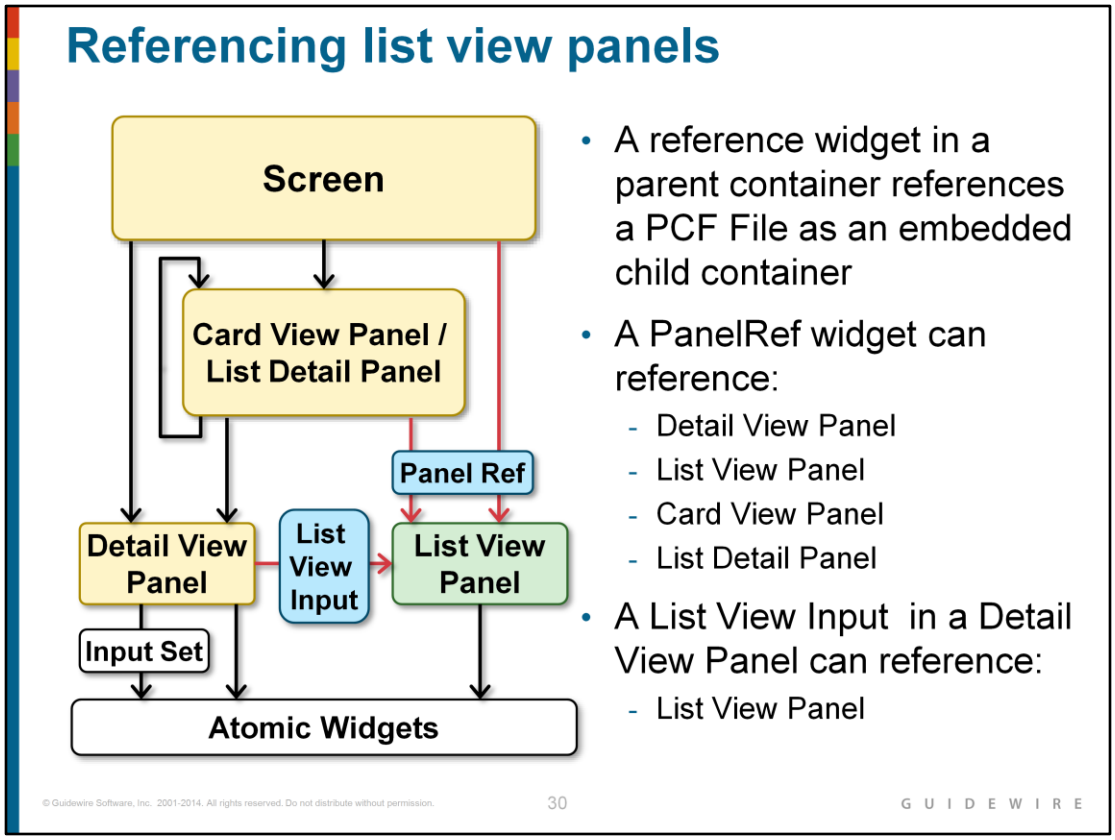
It is also possible to reload PCF files using the Guidewire API and/or internal server tools. The Reload PCF command can be found on the Reload page in Internal Tools. To access Internal Tools, you must log in as an administrator user, e.g., su/gw. Then, use ALT+SHIFT+T. In the tab bar, select Internal Tools → Reload. On the Reload page, click the Reload PCF Files button. The Reload PCF Files button calls the static method gw.api.tools.InternalToolsUtil.reloadPCFs().

Inline list view panels

This step is the same for standalone and inline list view panels. However, for inline list view panels, only the location PCF files get deployed.

Lesson outline

- List view panel fundamentals
- Create list view panels
- Reference list view panels



List view panels can be referenced by four types of containers: screens, card view panels, list detail panels, and detail view panels.

The methods for referencing a list view panel in a screen, card view panel or list detail panels is identical: you use a PanelRef widget. To embed a list view panel in a detail view panel you use a List View Input widget.

Reference a List View Panel

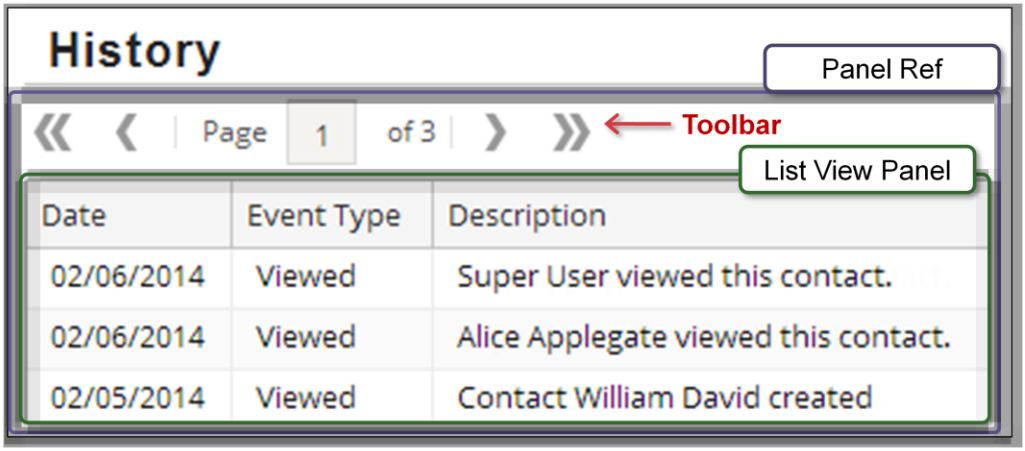
Screen, Card View Panel, or List Detail Panel

1. Add panel ref
2. Specify ref properties
3. Add toolbar
4. Deploy PCFs

List View Input

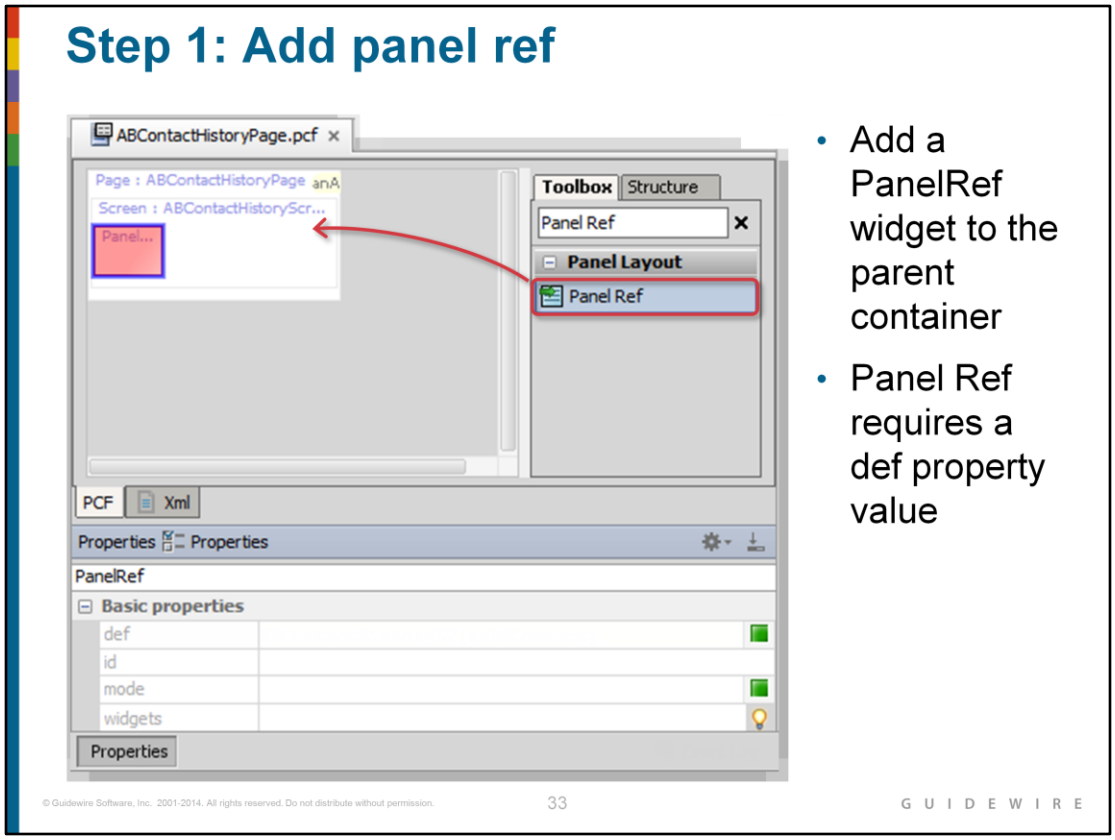
1. Add list view input
2. Specify ref properties
3. Add toolbar
4. Deploy PCFs

Panel Ref



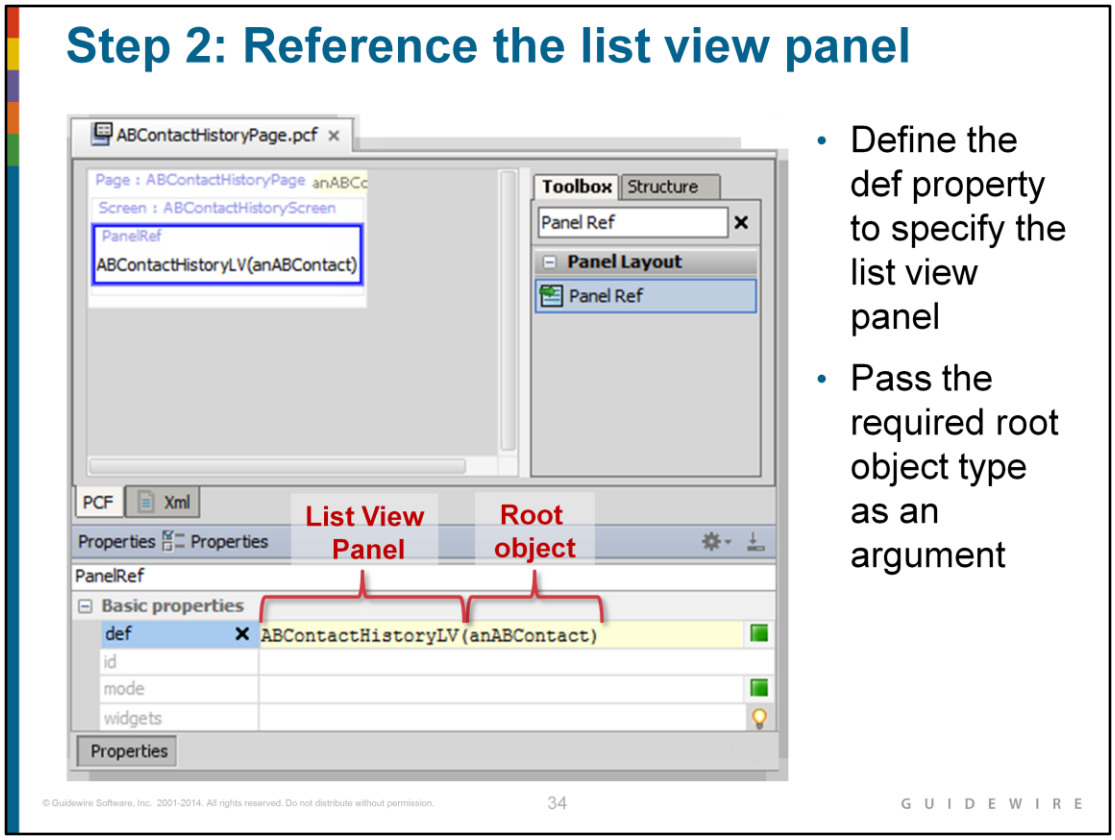
- A **Panel Ref** includes a reference to a "panel" container
  - Card View Panel, Detail View Panel, List Detail Panel, List View Panel, or Panel Set
  - Optionally supplies referenced panel with Title, Toolbar, Help Text
- If applicable, a toolbar automatically applies paging

A Panel Ref requires a reference to a panel such as a Detail View Panel, List View Panel, Panel Set or Card View Panel. A Panel Ref supplies the referenced panel with title, toolbar or instructional text.



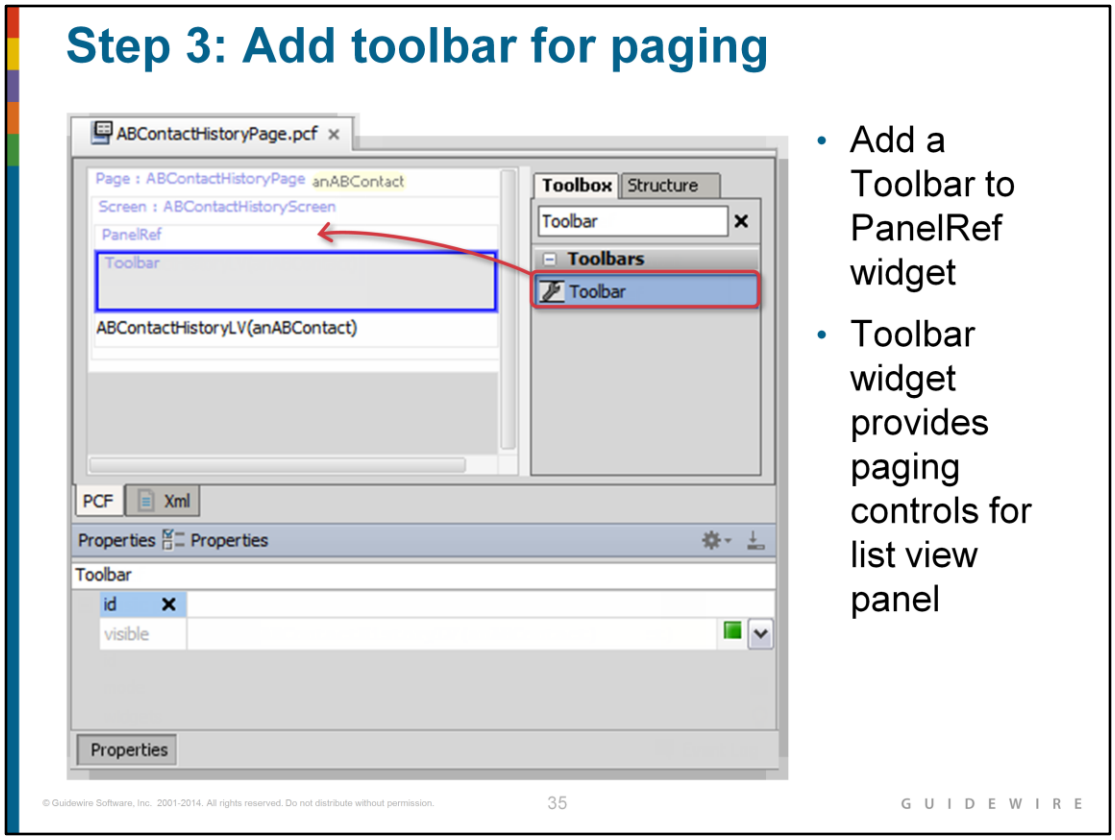
A PanelRef widget can reference a list view panel. To reference a list view panel from a parent container, add a Panel Ref in the appropriate place in the parent container.

In the slide example, the Panel Ref has already been placed in the Screen in the PCF editor canvas. The Properties window shows the Properties tab of the Panel Ref.



In the PanelRef's def property, specify the list view panel. Specify the required object(s) to pass to the list view panel in parentheses.

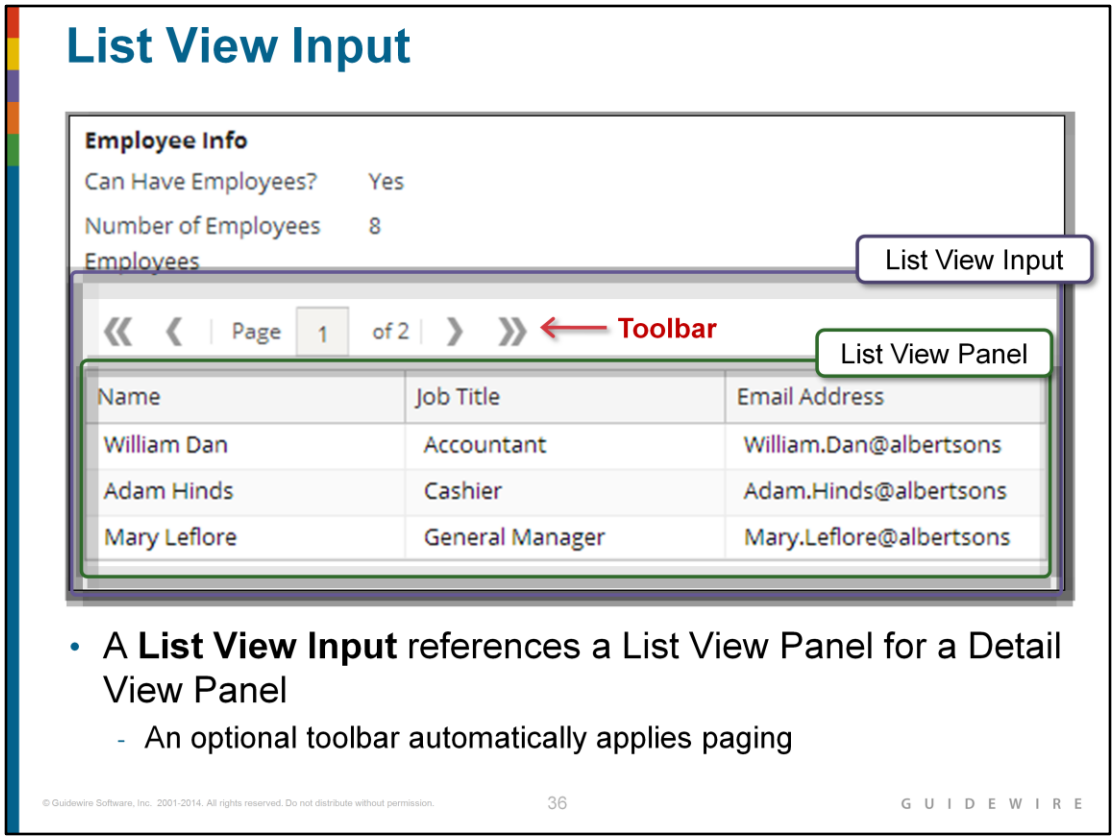
In the slide example, ABContactHistoryPage defines a root object named anABContact. ABContactHistoryPage contains a newly added Panel Ref. The Panel Ref requires a value for the def property. The def property references the list view panel named ABContactHistoryLV. The def property passes the anABContact root object as an argument to ABContactHistoryLV.



In the slide example, the Toolbar has already been placed in the PanelRef in the PCF editor canvas. The Properties window shows the Properties tab for the Toolbar.

A toolbar is a row of widgets associated with a container widget that lets the user take action on the data in the container widget. A toolbar can be directly add to a Screen, Panel Ref, or List View Input. Toolbars can also be associated with Detail View Panels, Card View Panels, List Detail Panels, and List View Panels.

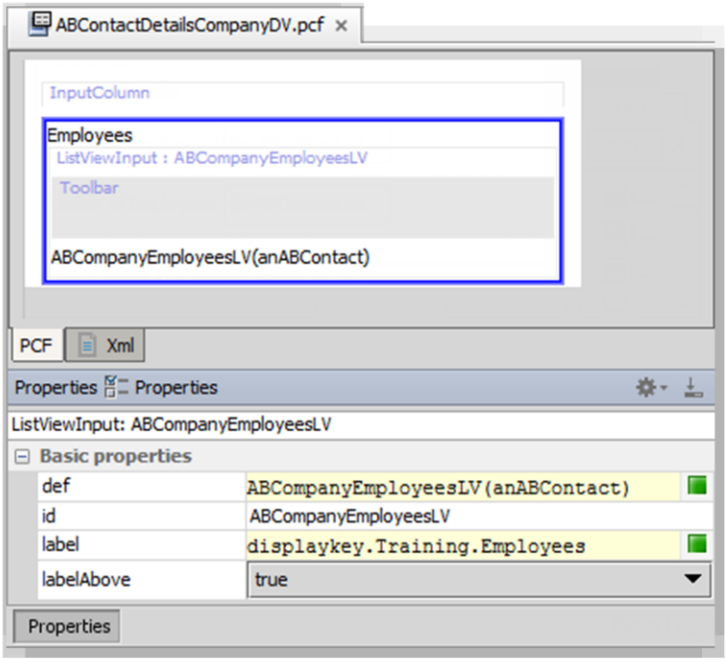
When a toolbar is associated with a list view panel, the toolbar may not have any button widgets. In this specific case, the toolbar association may be required to provide button paging controls. Paging button controls allow users to view the list view rows in sizable chunks and "page" through the results. A user can move to the first, last, previous and next page. A user can also specify a specific page number to view.



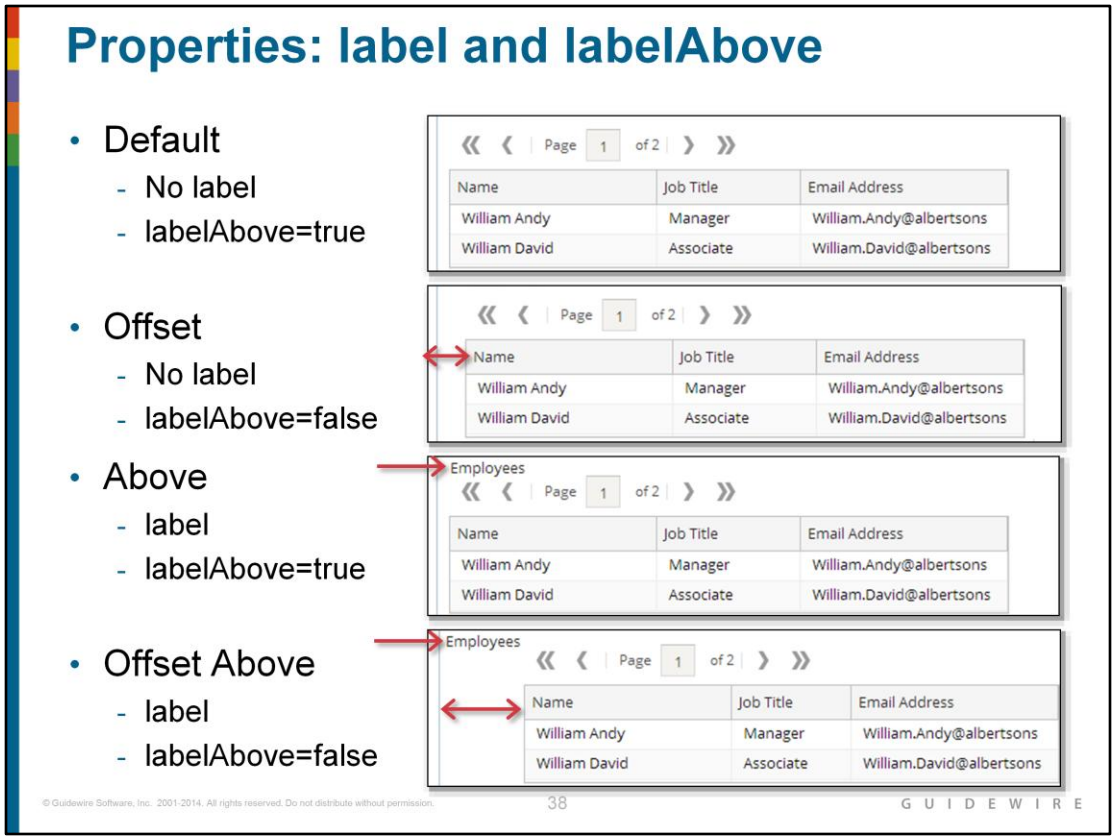
A ListViewInput element references a List View Panel and supplies it with an optional toolbar. A List View Input allows for an List View Panel to be placed in a Detail View Panel.

In the slide example, the page is in read-only mode. The toolbar automatically adds paging of the list in both read-only and edit modes.

List view input properties

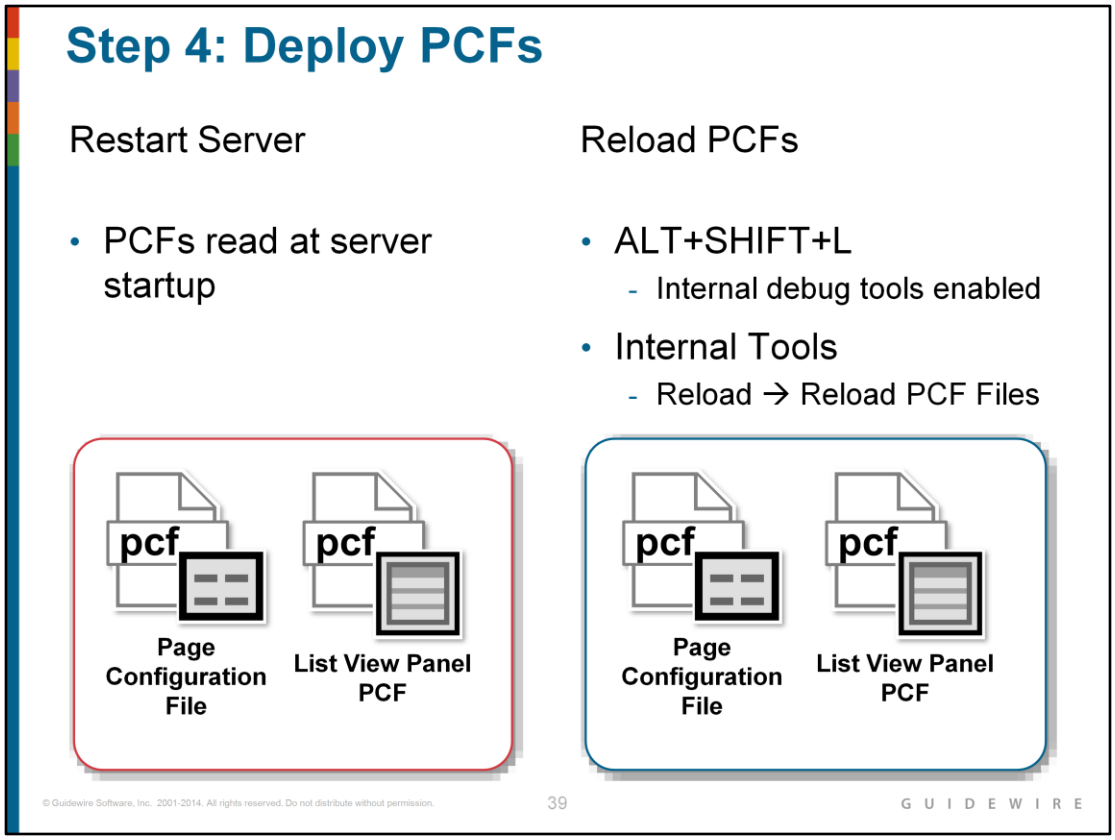


- def
  - references list view panel
- label
  - Value to display in UI
  - Use displaykey
- labelAbove
  - Affects label position
  - True is above
  - False is left of list view



When labelAbove is set to false, the application offsets the list view from the left side of the input column to make room for the label.

If you do not plan to use a label for the list view, you may want to set the labelAbove to true to make better use of the space on the screen.



It is also possible to reload PCF files using the Guidewire API and/or internal server tools. The Reload PCF command can be found on the Reload page in Internal Tools. To access Internal Tools, you must log in as an administrator user, e.g., su/gw. Then, use ALT+SHIFT+T. In the tab bar, select Internal Tools → Reload. On the Reload page, click the Reload PCF Files button. The Reload PCF Files button calls the static method gw.api.tools.InternalToolsUtil.reloadPCFs().

Lesson objectives review

- You should now be able to:
  - Describe the functionality of list view panels
  - Create a new list view panel
  - Create and modify row iterator, row, and cell widgets
  - Reference list view panels

Review questions

1. In a list view panle:
   a) What type of widget displays individual fields of data?
   b) What type of widget organizes the individual fields of data?
2. Assume you have a list view panel with "anABContact" as the root object. The list view panel displays the contact's addresses.
   a) What would the row iterator's "value" property be set to?
   b) What would the row iterator's "element name" be set to?
   c) What other widgets would make use of the element name?
3. A list view typically needs a toolbar, even if it is read-only. Why?
4. In what way is embedding a list view panel in a detail view panel different from embedding a list view panel in a screen?

Answers
1a) Cell widgets
1b) Row widgets
2a) anABContact.Addresses (assuming that the name of the addresses array is "Addresses")
2b) The value is arbitrary, but it would probably be set to something like "currentAddress".
2c) The cell widgets inside the row iterator's row. For example, a cell displaying the street would have a value of "currentAddress.Street".
3) The toolbar is needed for the paging controls. These controls are used to view each page of rows if the number of rows is greater than what can be displayed at one time.
4) To embed a list view panel in a detail view panel , use a ListViewInput widget. To embed a list view panel in a screen (or card view panle or list detail panel , you use a PanelRef widget.

Notices