

## Buttons and Check Boxes

"Button", "Check Box", and "Radio Button" types are set up in the same way as "Static" non-text controls (see previous topic), making similar use of STR#, PICT, ICON, SICN, cich, PAT, PAT#, CURS, acur, and clut resources. They differ, however, in the role played by the control's Min, Max, and Value.

## Control States

Check boxes and radio buttons can be in any one of four distinct control "states":

1. unchecked, unhilited
2. unchecked, hilited (when clicked)
3. checked, hilited (when clicked)
4. checked, unhilited

Buttons can only be in states 1 & 2 (never checked).

For buttons, check boxes, and radio buttons that are not linked to resource lists, the control Min should be set to 0, Max to 1, and Value to 0 (unchecked) or 1 (checked). When such controls are clicked, BaseCt then hilites the control by inverting its contents, and BaseVw (the view driver) checks or unchecks check boxes and radio buttons (again by inverting contents) after the mouse is released.

For buttons, check boxes, and radio buttons linked to resource lists (SICN, PAT#, acur, or clut) set Min = 0, Max = index of resource to display, and Value = 0 (unchecked) or Value = Max (checked) if you wish hiliting and checking to be displayed by inversion.

Alternatively, controls linked to resource lists (including STR# lists of resources) can use different resources in the list to display control states. To do this, set Min to a resource index corresponding to the unchecked state, and Max to an index corresponding to the checked state (or to a button's hilited state). If Min and Max differ by more than 1, and the control is not a button, then intermediate values are also used for the hilite states. For example, if a check box control is linked to an SICN small icon list, with Min = 4 and Max = 7, then the icons displayed for each state would be:

1. SICN #4 = unchecked, unhilited
2. SICN #5 = unchecked, hilited
3. SICN #6 = checked, hilited
4. SICN #7 = checked, unhilited

Alternatively, if Min = 4 and Max = 5, then,

1. SICN #4 = unchecked, unhilited
4. SICN #5 = checked, unhilited

and inversion would be used to display hilite states. This scheme provides a very simple way to create custom button, check box, and radio controls without requiring a single line of code to be written.

## Data Linking

Check box and radio button controls can be linked to program variables (see "Data Links" in the ViewIt Guide for more info on data linking). Data links are based on the relationship between the current control Value and the control Min & Max. If Value = Min, then 0 is returned by GetVal. If Value = Max, then 1 is returned by GetVal. Similarly, if 0 is passed to BaseCt by SetVal, then Value is set to Min. If 1 is passed by SetVal, then Value is set to Max. What this means is that a program always "sees" check boxes and radio buttons as having "values" of zero or one, and never needs to worry about how the control's Min, Max, and Value are being used.