

Developer: Christopher McNeely

Source: <https://github.com/professoraire/ElegantXML-Crestron>

# Elegant XML – Digital Values v1.4

## GENERAL INFORMATION

<b>SIMPL WINDOWS NAME</b>	Elegant XML – Digital Values v1.4
<b>CATEGORY</b>	Elegant Modules
<b>VERSION</b>	1.4
<b>SUMMARY</b>	Provides a connection point for setting and retrieving Digital values from an XML file.
<b>GENERAL NOTES</b>	This module works with the Elegant XML – Manager module and there must be a Manager module in the program for this module to work.
<b>CRESTRON HARDWARE REQUIRED</b>	3-Series Processor

## PARAMETERS

<b>ManagerID</b>	S	The ID of the Manager instance to associate this module with. The Manager instance will control what file is being loaded from.
<b>XmlPath[#] (1 – 50)</b>	S	The path to the XML attribute to read from the XML file.

## CONTROL

<b>InputValue[#] (1 – 50)</b>	D	This acts as a toggle. When the input is pulsed, it toggles the value on the output, switching it from high to low, or vice-versa. This value is stored in memory and the associated OutputValue[#] will reflect the toggled state.
-------------------------------	---	---

## FEEDBACK

<b>IsInitialized</b>	D	Goes high when the module has successfully registered with its Manager module.
<b>OutputValue[#] (1 – 50)</b>	D	Outputs the value read from the XML file on the XmlPath provided. Also outputs the toggled value from a pulse of the associated InputValue[#] join.

## ADDITIONAL DATA

<b>Revision History</b>	<p>v1.0 – Initial Release</p> <p>v1.2 – See Elegant XML – Manager v1.2 for relevant release notes.</p> <p>v1.3 – Added random 0.1 to 1 second initialization delay to help distribute load.</p> <p>v1.4 – Fixed a problem with values being passed through the processor regardless of whether the value was new. Now a value only propagates to an output if the value on the input is different than the current output.</p>
<b>Additional Details</b>	<p><b>Notes</b></p> <ul style="list-style-type: none"> <li>You do NOT need to place the RootElement on each path. This helps shorten the length of the paths needed.</li> <li>Also note the last optional delimiter in the path. If you place this last delimiter on the path you will be telling the parser to read or write the value inside of a pair of tags, the opening and closing tags. (Like: &lt;Quantity&gt;2&lt;/Quantity&gt;) This is useful for XML files that use unique individual elements for all properties, instead of placing multiple values on elements.</li> <li>If a value doesn't exist in the XML file, the value of the corresponding input is used. So, if you time your system startup to initialize the inputs of all your element module and then load the file, if any value isn't found it will use that initialized value instead. This can be useful when creating standardized systems where you'll likely want to start with the same values, or where you want to be able to create XML files with the default values on the fly.</li> </ul> <p>The exact format for specifying paths is as follows: Element[Identifier]{PathDelimiter}Element[Identifier]{PathDelimiter}Element[Identifier][PathDelimiter][DefaultValueDelimiter]DefaultValue</p> <p>The following file snippet and paths demonstrate how this works:</p> <pre>&lt;?xml version="1.0" encoding="UTF-8" ?&gt; &lt;Config&gt;   &lt;Switchers&gt;     &lt;Quantity&gt;2&lt;/Quantity&gt;     &lt;Switcher Id="1"&gt;       &lt;Inputs&gt;         &lt;Input Id="1" Name="Input 1" Patch="1" IsInstalled="true" /&gt;         &lt;Input Id="2" Name="Input 2" Patch="2" IsInstalled="false" /&gt;       &lt;/Inputs&gt;     &lt;/Switcher&gt;     &lt;Switcher Id="2"&gt;       &lt;Inputs&gt;         &lt;Input Id="1" Name="Laptop" Patch="9" IsInstalled="false" /&gt;       &lt;/Inputs&gt;     &lt;/Switcher&gt;   &lt;/Switchers&gt; &lt;/Config&gt;</pre> <p><b>Paths</b></p> <ol style="list-style-type: none"> <li>Switchers.Switcher Id="1".Inputs.Input Id="1".Name   DefaultName       <ol style="list-style-type: none"> <li>This outputs "Input 1" if the file is present, or "DefaultName" if not.</li> </ol> </li> <li>Switchers.Switcher Id="2".Inputs.Input Id="1".Patch   1       <ol style="list-style-type: none"> <li>This outputs "9" if the file is present, or "1" if not.</li> </ol> </li> <li>Switchers.Switcher Id="1".Inputs.Input Id="1".IsInstalled   true       <ol style="list-style-type: none"> <li>This would return "true" if the file is present, or "true" if not.</li> </ol> </li> <li>Switchers.Quantity.   0</li> </ol>

- 
- a. This outputs "2" if the file is present, or "0" if not.

You can see in this example that the optional identifier MUST occur immediately following the name of the element. For example, if you attempted to write the path: Switchers.Switcher Id="1".Inputs.Input Name="Laptop" this would fail, since the Name="Laptop" attribute isn't immediately following the name of the element, which is Input.

You can also see that the identifier isn't required. Be wary though! If you place multiple elements with the same name inside another and you don't provide identifiers, the first element that matches this will ALWAYS be used. The path: Switchers.Switcher Id="1".Inputs.Input.IsInstalled would always return a true (or Digital High) value, because it would always use the value of the element Input Id="1".

---