

Post Configurator Enablement Training Advanced Modifications

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Realize innovation.

Topics

Topic

Tcl Modifications – Advanced

- > What is Tcl
- Configuration objects/ Propertys
- Debugging the Postprocess
- Extend existing MOM-events
- Adding a new Level to the Sourcing
- > Changing the Access Level of an Object
- Use the Buffer Output -> ToDo

Q&A

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What is Tcl

The name Tcl is derived from "Tool Command Language" and is pronounced "tickle". Tcl is a radically simple open-source interpreted programming language that provides common facilities such as variables, procedures, and control structures as well as many useful features that are not found in any other major language.

You'll find all kind of manuals about TCL on the web. One possible starting point could be :

http://en.wikibooks.org/wiki/Tcl_Programming/Introduction

 \rightarrow NX Postpressors are TCL based (MOM environemnt is a TCL environement)

 \rightarrow PostConfigurator post processors are based on the existing MOM architecture

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Configuration Objects / Properties

1. Configuration Objects (Property groups)

2. Configuration Property

Full OFF
OFF
OFF - Custom value -
999999 4 • 6 2 OFF • 6 2 Custom procedure • 6 2
#Sinumerik_service_s 🔻 📄

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Define a Configuration Object

>use Intellisense from Tcl-Editor for fast creating of new objects

7			
8	new		
9	newObject	Property 🔺	Creates the template code for a property
10	newBoolProperty	Property	container object. Can be filled with properties
11	newIntProperty	Property	
12	newStringProperty	Property [≡]	
14	newDoubleProperty	Property	
15	new VectorProperty	Property _	
16	newPointProperty	Property	
17	new UIObject	UI .	
18			

➤rename the object and the UI-name/ tooltip

```
8 LIB_GE_CREATE_obj CONF_CUSTOM_tool_dimension {} {
9 LIB_GE_property_ui_name "Define Tool Dimension output"
10 LIB_GE_property_ui_tooltip "Define if and how Tool Dimension should be output"
11
12 12 13 }
```

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Define a Property within an Object 1/4

Create a new INT- property within the Tcl-editor

newObject	Property 🔺	Creates the template code for an integ
newBoolProperty	Property	property.
newIntProperty	Property	
newStringProperty	Property [≡]	
newDoubleProperty	Property	
newVectorProperty	Property _	£
newPointProperty	Property	
newUIObject	UI 🔻	

define, rename and set access level

> optional define a DropDown menu for the UI

	27 se	t id "output_tool_dimens	ion"
	28	set \$id Ø	
	29	<pre>set options(\$id)</pre>	{NO YES}
	30	<pre>set options_ids(\$id)</pre>	{0 1}
	31	<pre>set datatype(\$id)</pre>	"INT"
	32	<pre>set access(\$id)</pre>	222
	33	<pre>set dialog(\$id)</pre>	{{Output Tool Dimension}}
	34	<pre>set descr(\$id)</pre>	{{Turn the output of the tool dimension on or off}}
	35	<pre>set ui_parent(\$id)</pre>	"???"
	36	_	
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27 Se	et id "IntProperty"	
28	set \$id Ø	
29	<pre>set options(\$id)</pre>	{*VALUE*}
30	<pre>set datatype(\$id)</pre>	"INT"
31	<pre>set access(\$id)</pre>	222
32	<pre>set dialog(\$id)</pre>	{{Int Property}}
33	<pre>set descr(\$id)</pre>	{{A numeric Property}}
34	<pre>set ui_parent(\$id)</pre>	"GroupObjectName"
35		
36 }		

Define a Property within an Object 2/4

TCL Code	Description
set id "output_tool_dimension"	Unique identifyier of property
set \$id 0	Default value
set options(\$id) {NO YES}	Option list to display in DropDown menu
set option_ids(id) {0 1} Optional, Only needed	d for DropDown menu Return values assigned to menu options
set datatype(\$id) INT	Datatype of the property
set access(\$id) 222	Define access rights for property
<pre>set dialog(\$id) {{Output Tool Dimension}}</pre>	Property name shown in UI
<pre>set descr(\$id) {{Turn the output of the tool dimension on or off}}</pre>	ToolTip for UI
set ui_parent(\$id)	Define in which group this property will be shown

Define a Property within an Object 3/4

to put the property in an existing group turn the Show element ID's ON
 all Node-ID's and Group-ID's are shown in the UI

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By License		Full	•
🎖 Find			
Template Names (*NodelD = @CUI_ *	Debugging Output (*NodeID = @C	UI_DebugOut , Object = General_	UI_tree) 🔥
Cycle Setting (*NodeID = @CUI_CycleS			
General Cycle Settings (*NodeID = @		Provide and Provide an	
Drill (*NodeID = @CUI_CycleDrill , C	Show Element IDs in UI	On	- 🔐 💽
	Library Version	3.7.5	8 ?
CYCLE832 (*NodeID = @CUI_Cycle8			
Messages and Listing (*NodeID = @CUI			
Information Listing (*NodeID = @CI			
Language Settings (*NodeID = @CL			
Messages (*NodeID = @CUI Msg. (
Warnings (*NodeID = @CUI Warnin			
Kinematics Setting (*NodeID = @CULK			
Arc Output (*NodeID = @CUL ArcO			
Home Position (*NodeID = @CULLA			
Real Machine Kinematics (*NodeID			
TCDM Kinematics (*NedelD = @CU		N	
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Thing Plane Kinematics (Nodel) =			
- Miscellaneous (NodelD = @COLMisce			
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Post Protection ("NodelD = @CUI_C			
Pretreatment ("NodelD = @CUI_Pre			
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Post Configurator File		PC_Session07_S840E	2± 🛨 📝 🚺
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Controller Version (*NodeID = @CU ^	Tool Change (*NodeID = @CUI_ToolCha	angeGroup , Object = General_UI	tree))
Output Settings (*NodeID = @CUI_(Tool Process	0	-0	2
General Setting (*NodeID = @CUI_Gene	ToorPreselect	011 -		-
Clamping (*NodeID = @CUI_Clamp	Max Tool Number	Custom Value	1	2
Coolant (*NodeID = @CUI_Coolant	Specify Value	999999	3	
 Coordinate System (*NodeID = @Cl 	Max D Number	4	8	2
File Output Handling (*NodeID = @				1
Spindle (*NodeID = @CUI_Spindle ,	Cutcom Actual Radius	Off	. 6	4
Tool Change (*NodeID = @CUI_Toc =	Output Tool Dimension	NO -		?
Motion Setting (*NodeID = @CUI_Moti	Auto Tool Change ("NodeID = @CUI ToolCl	hangeAuto, Object = General UI tree)		~
Additional Motions (*NodeID = @C				-
Feedrates ("NodeID = @CUI_Motion	Auto Change Template	Custom Procedure 👻	()	4
Template Names (*NodelD = @CUI_Moti Cycle Setting (*NodelD = @CUI_CycleSi General Cycle Settings (*NodelD = @	msg_method trafoof tool_change_return_home_Z tool_change_return_home			
Drill (*NodeID = @CUI CycleDrill , C	Auto Preselect Template	Tool Preselect by Nun 👻	A	?
CYCLE800 (*NodeID = @CUI Cycle8		T ID I II N		2
CYCLE832 (*NodeID = @CUI Cycle8	Auto Preselect Last Template	Tool Preselect by Nun 👻		4
Messages and Listing (*NodeID = @CUI	Manual Tool Change (*NodeID = @CUI_Too	IChangeManual , Object = General_UI_	tree)	^
Information Listing (*NodeID = @CI	Manual Change Template	Tool Change by Numl 👻	A	?
Language Settings (*NodeID = @CL	Manual Broad and Translate	To al Describe the New m	a	2
Messages (*NodeID = @CUI_Msg , (Manual Preselect Template	Tool Preselect by Nun 👻		-
Warningr (*NodeID = @CHI Warnin	Manual Preselect Last Template	Tool Preselect by Nun 👻	6	2
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Define a Property within an Object 4/4

Set the ui_parent for the property to get it in the group

Full = General_UI_tree) OFF		
= General_UI_tree)	,	
= General_UI_tree)		
Custom value	+ 🔒 🍳	
4 OFF	- 8 ? - 8 ?	H
leral_UI_tree) Custom procedure		
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	4 OFF NO eral_UL_tree) Custom procedure	4 • 6 2 OFF • 6 2 NO • 6 2 eral_UL_tree) ^ 6 2 Custom procedure • 6 2 #Sinumerik_service_s •

27	<pre>7 set id "output_tool_dimension</pre>	on"
28	3 set \$id 0	
9	<pre>set options(\$id)</pre>	{NO YES}
80	<pre>set options_ids(\$id)</pre>	{0 1}
31	<pre>set datatype(\$id)</pre>	"INT"
32	<pre>set access(\$id)</pre>	222
33	<pre>set dialog(\$id)</pre>	{{Output Tool Dimension}}
34	<pre>set descr(\$id)</pre>	{{Turn the output of the tool dimension on or off}}
35	<pre>5 set ui_parent(\$id)</pre>	"@CUI_ToolChangeGroup"
-		

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Fully defined Configuration Object

```
LIB_GE_CREATE_obj CONF_CUSTOM_tool_dimension { } {
```

ConfigurationObject

LIB_GE_property_ui_name "Define Tool Dimension Output"

LIB_GE_property_ui_tooltip "Define if and how Tool Dimension should be output"

```
set id "output_tool_dimension"
set $id 0
set options($id) {NO|YES}
set options_ids($id) {0|1}
set datatype($id) INT ConfigurationProperty
set access($id) 222
set dialog($id) {{Output Tool Dimension}}
set descr($id) {{Turns the output of the tool dimension on or off}}
Set ui_parent($id) "@CUI_ToolChangeGroup"
```

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How to deal with properties in TCL

Getting the current value of a property

object_name *property_name*

e.g.

set current_value [CONF_CUSTOM_tool_dimension output_tool_dimension]

Changing the value of a property in TCL

object_name set *property_name* value

e.g.

CONF_CUSTOM_tool_dimension set output_tool_dimension 1

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Output the Tooldiameter depend on Property setting

Post Configurator - [PC_Session07_S840 Files	D.psc]			03
Filter				^
By License		Full		•
🐨 Find				
Controller Capabilities (*NodeID = @CUI_C	Tool Change (*NodeID = @CUI_ToolChangeGroup , Object = General_UI_	_tree)		~
Controller Version (*NodeID = @CUI_C Output Settings (*NodeID = @CUI Ctrl)	Tool Preselect	On 👻	d (?
- General Setting (*NodeID = @CUI_General!	Max Tool Number	Custom Value 🔹		?
- Clamping (*NodeID = @CUI_Clamping	Specify Value	999999		
- Coolant (*NodeID = @CUI_Coolant , Ol	Max D Number	4 👻	8	?
- Coordinate System ("NodelD = @COI_(- File Output Handling (*NodeID = @CU	Cutcom Actual Radius	Off 👻	8	?
- Spindle (*NodeID = @CUI_Spindle , Ob	Output Tool Dimension	YES 👻	d l	?
Tool Change (*NodeID = @CUI_ToolCh	Auto Tool Change (*NodeID = @CUI_ToolChangeAuto , Object = General_UI_tree)			^
+ Motion Setting (*NodeID = @CUI_MotionS	Auto Change Template	Custom Procedure 🔻 👔	1 ?	0
Messages and Listing (*NodeID = @CUI_M Kinematics Setting (*NodeID = @CUI_Kine Miscellaneous (*NodeID = @CUI_Miscellar	if {[CUSTOM_TOOLSETTINGS output_tool_dimension]==1) { MOM_output_literal ";Tooldiameter= \$::mom_tool_diameter" i tool_change_name msg_method	× H		
	Auto Preselect Template	Tool Preselect by Nun 👻	8 ?	2
	Auto Preselect Last Template	Tool Preselect by Nun 👻	3	Ĵ.
	Manual Tool Change (*NodeID = @CUI_ToolChangeManual , Object = General_UI_	tree)		^
	Manual Change Template	Tool Change by Numl 👻 I	8 ?	Q
	Manual Preselect Template	Tool Preselect by Nun 👻 🛛	8 2	Q [
۰ m	Manual Preselect Last Template	Tool Preselect by Nun 👻	8 2	1
Actions				^
Post Configurator File		PC_Session07_S840D_s 🕶	2	BDF
		OK Annly	С	ancel

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Customize Grouping 1/3



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Customize Grouping – Create a new group 2/3

 \succ for the UI there are templates, e.g. for Nodes, Groups there is a special datatype for groups



20

21 }

set ui sequence(\$id)

-1

for create a new Main group use "root"

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Customize Grouping – add the property to a new group 3/3



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Property Datatypes

set	datatype(\$id)	INT	
set	<pre>datatype(\$id)</pre>	DOUBLE / REAL	
set	<pre>datatype(\$id)</pre>	STRING	
set	<pre>datatype(\$id)</pre>	Vector	(Vector of 3 doubles)
set	<pre>datatype(\$id)</pre>	Point	
set	<pre>datatype(\$id)</pre>	GROUP	(for propertys)
set	<pre>datatype(\$id)</pre>	NODE	(need for own groups in the tree)
Set	datatype(\$id)	COMMANDBLOCK	(for tcl Code or Block templates)

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Example – Create 2nd property

		L1	IB_GE_CREATE_obj CONF_CUSTOM_tool_dimension {
Post Configurator - [Sinumeril	k.psc]	ى ×	
Filter		^	LIB_GE_property_ui_name "Define Too
By License		Full	LIB_GE_property_ui_tooltip "Define
Tind Find			
- Controller Capabilities	Tool Change	~	set id "output_tool_dimension"
- Controller version	Tooldimension		set sid 0
Output Settings			Set șid U
- General Setting	Output Tool Dimension	NO V	set options(\$id) {NO YES}
Clamping	Output Diameter or Radius of tool	Radius 👻 🛅 📿	<pre>set options_ids(\$id) {0 1}</pre>
- Coolant			
- Coordinate System			set datatype(\$1d) INT
- File Output Handling			set access(\$id) 222
Spindle			set dialog(\$id) {{Output Tool Dimen
Tool Change	• · · · · · · · · · · · · · · · · · · ·		
+ Motion Setting			set descr(\$id) {{Turns the output o
+ Cycle Setting			
+ Messages and Listing			set id "output mode tool dimension"
+ Miscellaneous			
Le Miscellaneous			set \$id 1
Actions		^	set options(\$id) {Radius Diamete
Edit Post Configurator File		#ctrl_sinumerik_base ▼ 📝	<pre>set options_ids(\$id) {2 1}</pre>
Show Changes		i	set datatype(\$id) INT
Encrypt Post Configurator Files			<pre>set access(\$id) 222</pre>
		OK Apply Cancel	<pre>set dialog(\$id) {{Output as}}</pre>
		tippij concer	set descr(\$id) {{Define whether dim

LIB_GE_property_ui_name "Define Tool Dimension Output" LIB_GE_property_ui_tooltip "Define if and how Tool Dimension should be output" set id "output_tool_dimension" set \$id 0 set options(\$id) {NO|YES} set options_ids(\$id) {0|1} set datatype(\$id) INT set access(\$id) 222 set dialog(\$id) {{Output Tool Dimension}} set descr(\$id) {{Turns the output of the tool dimension on or off}} set id "output_mode_tool_dimension" set \$id 1 set options(\$id) {Radius|Diameter} set options_ids(\$id) {2|1} set datatype(\$id) INT set access(\$id) 222

set descr(\$id) {{Define whether dimension should be output as diameter or radius}}

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Option 1: Outputting it with the tool change

• Post Configurator - [Sinumer	ik.psc)	υx	
Filter		٨	
By License		Full	LIB_GE_CKEATE_OD] CONF_CUSTOM_tool_group {} { LIB_GE_property_ui_name "Define Tool Dimension output"
M Find			LIB_GE_property_ui_tooltip "Define if and how Tool Dimension should be output"
 Find Controller Capabilities Controller version Output Settings General Setting Coordinate System File Output Handling Spindle Tool Change Motion Setting Cycle Setting Kinematics Setting Miscellaneous 	Tool Change Tool preselect Max tool number Specify Value Max D number Cutcom actual radius Auto Tool Change Auto change template global mom_tool_diameter if {[CONF_CUSTOM_tool_group output_tool_dimension]==1} { if ([CONF_CUSTOM_tool_group output_diameter]==0) { MOM_output_literal ";Toolradius = [format %.3f [expr \$mom_tool_diameter/2]]" Auto preselect template Auto preselect last template Manual Tool Change Tooldimension	Custom value Custom value Custom value Custom value Custom value Custom value Custom procedure Custom proced	<pre>LIB_GE_property_ui_tooltip "Define if and how Tool Dimension should be output" set id "output_tool_dimension" set Sid 0 set options(Sid) {NO YES} set options(Sid) {O 1} set datatype(Sid) 222 set dialog(Sid) {Cutput Tool Dimension}) set descr(Sid) {Cutput Tool Dimension}) set descr(Sid) {Cutput Tool Dimension} set ii_parent(\$id) "Tooldimension_Group" set id "output_diameter" set Sid 0 set options(Sid) {Cutput Diameter} set options(Sid) {Cutput Diameter} set datatype(Sid) {Cutput Diameter or Radius of tool}) set descr(Sid) {Cutput Diameter or Radius of tool}) set ui_parent(\$id) {C</pre>
Actions Edit Post Configurator File Show Changes Encrypt Post Configurator Files	Output Tool Dimension Output Diameter or Radius of tool	YES • d 2 Diameter • d 2 Ctrl_sinumerik_base.t • 2 ii 6 0K Apply Cancel	N14 G153 XO. YO. N16 ; ToolDiameter = 40.000 N18 T1 M6 N20 G54
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Setting the access level					SIEMENS
- Access level is coded by number:		0 Utiddan	1	2	
		HIdden	Read Access	Read & Write	2
	Access Code	Basic License	Advanced License	Full License	
	222	Read / Write	Read / Write	Read / Write	
	122	Read	Read / Write	Read / Write	
	022	Hidden	Read / Write	Read / Write	
	012	Hidden	Read	Read / Write	
	002	Hidden	Hidden	Read / Write	
	001	Hidden	Hidden	Read	
	000	Hidden	Hidden	Hidden	
				I	
	<pre>set access(\$id)</pre>	2	2	2	

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_ _ _



Debugging the Post Processor

Debugging the Post Processor

Standard NX Review Tool still works

- Some review output will be suppressed if the Turbo Mode is On
- Overview of MOM Events and MOM Variables
- New debug functionality "Show where output comes from" (UI)
- Helps to identify what is creating certain output lines

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NX Review Tool – Turbo Mode ON

- 1. Turbo Mode is ON (See Day 02)
- 2. Post Process the required Operation with Review Tool ON

- 3. Turn Turbo Mode OFF (See Day 02)
- 4. Post Process the required Operation with Review Tool ON

Note: Using the review tool will dramatically increase the post processing time.



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Using Review Tool with VARIABLE_STREAMLINE



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Show where output comes from

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- New functionallity for Post Configurator posts to list
- Which MOM Event generated this line
- Which Library function generated that line
- Buffer and Sequence Information of the Line

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Show where output comes from

1. Turn "Show where output comes from" ON



Filter

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Option 2: Using the sequences

What is the OutputBuffer:

- Within a buffer sequence tags are asssigned to NC-lines
- Output can be reordered within the same buffer
- Additional output can be added to the buffer sequence
- Output can be suppressed from buffer sequence
- A template of the command to manipulate the buffer will be displayed if "Show where output comes from" is activated
- LIB_GE_command_buffer_seqLIB_SPF_operation_header_comment HEADER_COMMENT {@NEWLINE1 @INFOLINE @NEWLINE2}

Add Tool Information output to operation header buffer

Create a procedure containing the code to output Tool information

```
proc Custom_Tool_Information { } {
global mom_tool_diameter

if {[CONF_CUSTOM_tool_group output_tool_diameter]==0} {
    if {[CONF_CUSTOM_tool_group output_diameter]==0} {
      MOM_output_literal ";Toolradius = [format %.3f [expr $mom_tool_diameter/2]]"
      } else {
      MOM_output_literal ";Tooldiameter = [format %.3f $mom_tool_diameter]"
      }
}
```

Add this proc to the output buffer

LIB_GE_command_buffer_seq MOM_tool_change_LIB TOOL_CHANGE {Custom_Tool_Information @TOOL_CHANGE}

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Extending existing MOM Events

Extending existing MOM Events



If it possible to react to certain MOM events to modify them, or extend them

It is possible to execute Tcl code before or after certain MOM events

Note: Not every MOM event can be extended (List in the next slides)

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Available MOM Events

- MOM_auxfun_ENTRY {args} {}
- MOM_before_motion_ENTRY {args} {}
- MOM_before_output_LIB_ENTRY {args} {}
- MOM_bore_back_move_LIB_ENTRY {args} {}
- MOM_bore_drag_move_LIB_ENTRY {args} {}
- MOM_bore_dwell_move_LIB_ENTRY {args} {}
- MOM_bore_manual_dwell_move_LIB_ENTRY {args} {}
- MOM_bore_manual_move_LIB_ENTRY {args} {}
- MOM_bore_move_LIB_ENTRY {args} {}
- MOM_bore_no_drag_move_LIB_ENTRY {args} {}
- MOM_circular_move_LIB_ENTRY {args} {}
- MOM_coolant_off_ENTRY {args} {}
- MOM_coolant_on_ENTRY {args} {}
- MOM_delay_ENTRY {args} {}
- MOM_drill_break_chip_move_LIB_ENTRY {args} {}
- MOM_drill_deep_move_LIB_ENTRY {args} {}
- MOM_drill_dwell_move_LIB_ENTRY {args} {}
- MOM_drill_move_LIB_ENTRY {args} {}
- MOM_drill_text_move_LIB_ENTRY {args} {}
- MOM_end_of_path_LIB_ENTRY {args} {}
- MOM_end_of_program_LIB_ENTRY {args} {}
- MOM_end_of_subop_path_LIB_ENTRY {args} {}
- MOM_first_move_LIB_ENTRY {args} {}
- MOM_first_tool_LIB_ENTRY {args} {}
- MOM_from_move_LIB_ENTRY {args} {}
- MOM_gohome_move_LIB_ENTRY {args} {}
- MOM_helix_move_LIB_ENTRY {args} {}
- MOM_linear_move_LIB_ENTRY {args} {}
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- MOM_machine_mode_LIB_ENTRY {args} {}
- MOM_nurbs_move_LIB_ENTRY {args} {}
- MOM_operator_message_ENTRY {args} {}
- MOM_opstop_ENTRY {args} {}
- MOM_prefun_ENTRY {args} {}
- MOM_rapid_move_LIB_ENTRY {args} {}
- MOM_start_of_path_LIB_ENTRY {args} {}
- MOM_start_of_program_LIB_ENTRY {position} {
- MOM start of subop path LIB ENTRY {args} {}
- MOM_stop_ENTRY {args} {}
- MOM_tap_move_LIB_ENTRY {args} {}
- MOM_tool_change_LIB_ENTRY {args} {}
- LIB_RETURN_move_LIB_ENTRY {args} {}
- LIB_ROTARY_positionning_init_ENTRY {args} {}
- LIB_ROTARY_simultaneous_init_ENTRY {args} {}
- LIB_SPF_KINEMATICS_set_plane_output_kin_ENTRY {args} {}
- LIB_SPF_KINEMATICS_set_simultanous_kin_ENTRY {args} {}
- LIB_SPF_KINEMATICS_set_turn_kin_ENTRY {args} {}
- LIB_SPF_default_initial_setting_ENTRY {args} {}
 - LIB_SPF_polar_cart_ENTRY {args} {}
- LIB_SPF_spindle_direction_ENTRY {args} {}
- LIB_SPF_spindle_max_min_ENTRY {args} {}
- LIB_SPF_spindle_set_ENTRY {args} {}
- LIB_SPF_program_header_comment_LIB_ENTRY {args} {}
- LIB_SPF_operation_header_comment_LIB_ENTRY {args} {}

- LIB_CTRL_cut_move_LIB_ENTRY {args} {}
- LIB_CTRL_rapid_move_LIB_ENTRY {args} {}
- LIB CTRL_engage_move_LIB_ENTRY {args} {}
- LIB CTRL retract move LIB ENTRY {args} {}
- LIB_CTRL_firstcut_move_LIB_ENTRY {args} {}
- LIB CTRL approach move LIB ENTRY {args} {}
- LIB_CTRL_stepover_move_LIB_ENTRY {args} {}
- LIB CTRL departure move LIB ENTRY {args} {}
- LIB_CTRL_return_move_LIB_ENTRY {args} {}
- LIB_CTRL_traversal_move_LIB_ENTRY {args} {}
- LIB_CTRL_sidecut_move_LIB_ENTRY {args} {}
- LIB_CTRL_from_move_LIB_ENTRY {args} {}
- LIB_CTRL_gohome_move_LIB_ENTRY {args} {}
- LIB_CTRL_gohome_default_move_LIB_ENTRY {args} {}
- LIB_CTRL_cycle_move_LIB_ENTRY {args} {}
- LIB_CTRL_lift_move_LIB_ENTRY {args} {}
- LIB_CTRL_undefined_move_LIB_ENTRY {args} {}

Extending of a MOM Event

Code Snippet:

```
proc MOM_end_of_program_LIB_ENTRY {position} {
    switch -- $position {
        "start"
        {
            #Your code before the event goes here
        }
        "end"
        {
            #Your code after the event goes here
        }
    }
}
```

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Adding a new Level to the Sourcing

Adding a new Level to the Sourcing

- The sourcing is handled in the main Post Configurator entry file (file ending .psc)
- .psc file is an XML file
- To add a new layer add a new entry to the sourcing sequence
- Levels will be loaded in the order of the sourcing
- The sourcing will automatically check if there is a Tcl or PCE file (Tcl will be prefered in the case both exist)

```
<Sourcing>

<Sequence>

<Filename Name="ctrl_fanuc_base" Processing="true"/>

<Filename Name="PostConfiguratorTestl_mtb" Processing="true"/>

<Filename Name="oem_ootb_5ax_fanuc" Processing="true"/>

<Filename Name="machine_ootb_5ax_fanuc" Processing="true"/>

<Filename Name="new_level_file" Processing="true"/>

<Filename Name="PostConfiguratorTestl_service_fanuc" Processing="true"/>

</Sequence>
```

</Sourcing>

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Changing the Access Level of an Object

Changing the Access level for existing Objects

- It is possible to decrease the Access level of a predefined object
- The corresponding and required names can be found in the documentation

Note: It is not possible to raise a access level again, it is only possible to lower it.

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Syntax:

LIB_GE_CONF_set_property_access *Object_name* *Properties* "*Access_Levels*" *Option*

Object_name	The name of the parent object	
Properties	A list of properties the access level need to be lowered. Also possible to change all.	"rotate_before rotate_after" all
Access_Levels	A list of license level for which the access code will be changed.	"BASIC ADVANCED FULL"
Option	The new access option	HIDE READONLY

Samples:

LIB_GE_CONF_set_property_access CONF_FANUC_controller all "BASIC ADVANCED" HIDE

LIB_GE_CONF_set_property_access CONF_FANUC_G68 "rotate_before rotate_after" BASIC READONLY

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