Struct Actions

Struct actions are complex data actions designed to be used with XINA Structs. Unlike most API actions, they may involve complex multi-step operations, and are dependent on the structs configuration of groups and databases.

Data Actions

STRUCT BUFFER IMPORT

Imports a buffer data file into a pipe.

Property	Value	Req	Default
action	`"struct_buffer_import"`	?	
pipe	pipe group specifier	?	
file	binary object	?	
conf	`jsonobject`		
t_import	`instant`		

When a data set is imported the XINA server will run the following steps:

- For each row:
  - validate time and value
  - process mnemonic
    - If mnemonic ID
      - If found in definitions database:
        - If mnemonic is deprecated, throw error
        - Else, use mnemonic for row
      - Else, throw error due to unrecognized ID
    - Else, parse name and optional unit
      - If name match found:
        - If unit is provided and does not match, throw error
        - If mnemonic is deprecated, throw error
        - Else, use mnemonic for row
      - Else, mnemonic is new, create new temporary mnemonic definition based on provided information
- If any rows contain same mnemonic and time, throw error
- Check for time overlap in database
  - If found
    - If `on_overlap` = `fail`, throw error
    - Else If `on_overlap` = `delete`, delete all data from database in time range of imported data
    - Else (`on_overlap` = `ignore`), do nothing
- If new mnemonic definitions created, insert into mnemonic definition database
- Insert data into mnemonic database

STRUCT MN ALIAS

Adds one or more aliases of name/unit pairs to a single existing mnemonic.

Property	Value
`action`	`"struct_mn_alias"`
`database`	mnemonic definition database specifier
`mn`	mnemonic ID
`aliases`	`string[]`, name/unit pair alias(es) for mnemonic

STRUCT MN EDIT

Edits one or more properties of a single existing mnemonic.

Property	Value	Required
`action`	`"struct_mn_edit"`	?
`database`	mnemonic definition database specifier	?
`mn`	mnemonic ID	?
`name`	`string`, new name/unit pair for mnemonic	
`state`	`string`	

STRUCT MN MERGE

Merges one or more existing mnemonics into a single existing mnemonic.

STRUCT EVENT

Performs context-aware event operations.

Unlike typical record operations, these actions support event definition lookup and creation. Event records or updates may specify a `"name"` property, as if it were a database field. This will be used to lookup a corresponding event ID from the event definitions associated with the database, and create a new definition with the name if one is not found. Alternatively, the `"name"` may reference an event definition by external ID, by starting with the `$` character.

If an event specifies both a `"name"` and `"e_id"`, the action will fail, as the outcome is ambiguous. If the `"name"` property value is numeric or numeric text, it will interpretted as a direct event ID reference (as if it had been provided as `"e_id"`).

`"e_id"` values are validated against existing event definitions, and the action will fail if the event ID is not found.

STRUCT EVENT INSERT

Inserts one or more events into a single event database.

Property	Value	Req	Default
action	`"struct_event"`	?	
op	`"insert"`	?	
database	event database	?	
events	event records	?	

If the event database has an associated event change database, the event change database will be checked for any `update` records, and the changes will be applied to the incoming events before they are inserted.

If any inserted UEIDs are already present in the database, the action will fail.

STRUCT EVENT CLOSE

Closes one or more open interval event(s).

Property	Value	Req	Default
action	`"struct_event"`	?	
op	`"close"`	?	
database	event database	?	
t	`instant(us)` closing time		now
events	events specifier	?	
fields	field value map		

The closing time is specified by the `t` property.

The `events` property is an extension of the standard records specifier, but may include UEID(s) as strings. Only currently open intervals in the specified database will be affected.

If the `fields` property is provided, updates the value(s) of the specified field(s) in the map for all events being closed.

STRUCT EVENT UPDATE

Updates one or more events.

Property	Value	Req	Default
action	`"struct_event"`	?	
op	`"update"`	?	
database	event database	?	
t	`instant(us)` update time		now

Property	Value	Req	Default
events	events specifier		
fields	field(s) to update	?	

If the event database is a child of a pipe, an event change record is inserted in the associated event change database for each event UEID matching the specifier. Additionally, if any updated fields are not configured to permit updating, the action will fail.

STRUCT EVENT CLEAR

Schema Actions

STRUCT CREATE

The STRUCT CREATE action is used to create a variety of XINA Structs compatible schema elements.

STRUCT CREATE CATEGORY

Creates a structs category group.

Property	Value	Req	Default
action	`"struct_create"`	?	
create	`"category"`	?	
parent	group specifier	?	
name	`string`	?	
label	`string`		name
desc	`string`		label
group_teams	team group privilege map		
database_teams	team database privilege map		

The `parent` group must be either a project group or category group, or the action will fail. The `name` (and `label`, if provided) must not be in use by any group siblings, or the action will fail.

STRUCT CREATE MODEL

Creates a structs model group.

Property	Value	Req	Default
action	`"struct_create"`	?	
create	`"model"`	?	
parent	group specifier	?	

Property	Value	Req	Default
name	`string`	?	
label	`string`		name
desc	`string`		label
event	`boolean`		`false`
eventf	`boolean`		`false`
eventfs	`boolean`		`false`
group_teams	team group privilege map		
database_teams	team database privilege map		

The `parent` group must be either a project group or category group, or the action will fail. The `name` (and `label`, if provided) must not be in use by any group siblings, or the action will fail.

STRUCT CREATE PIPE

Creates a struct pipe group.

Property	Value	Required	Default
action	`"struct_create"`	?	
create	`"pipe"`	?	
model	group specifier	?	
name	`string`	?	
label	`string`		name
desc	`string`		label
group_teams	team group privilege map		
database_teams	team database privilege map		
partition	`boolean` or `{"from": <start year>, "to": <end year>}`		`false`
	See the pipe definition for other supported properties		

The `parent` group must be either a project group or category group, or the action will fail. The `name` (and `label`, if provided) must not be in use by any group siblings, or the action will fail.

STRUCT CREATE DEF

Creates a structs definitions group, with associated databases.

Property	Value	Req	Default
action	`"struct_create"`	?	
create	`"def"`	?	
parent	group specifier	?	

The `parent` group must be either a project, category, or model group, or the action will fail.

STRUCT CREATE EVENT

Creates a new structs event database.

Property	Value	Req	Default
action	`"struct_create"`	?	
create	`"event"`	?	
group	group specifier	?	
type	`"none"`, `"file"`, or `"files"`		`"none"`
name	string		`"event"`, `"eventf"`, or `"eventfs"`
label	string		name
desc	string		label
singular	string		`"event"`
plural	string		singular`s`
conf	JSON object		
label_type	string or text XINA type		`utf8vstring(128)`
fields	array of field definitions		
teams	team database privilege map		

STRUCT CREATE NOTEBOOK

Creates a new structs notebook database.

Property	Value	Req	Default
action	`"struct_create"`	?	
create	`"notebook"`	?	
parent	group specifier	?	
name	string	?	
label	string		name
desc	string		label
fields	array of field definitions		
teams	team database privilege map		

STRUCT CREATE PROJECT

Creates a structs project group.

Property	Value	Req	Default

action	`"struct_create"`	?	
create	`"project"`	?	
parent	group specifier		
name	`string`	?	
label	`string`		name
desc	`string`		label
group_teams	team group privilege map		
database_teams	team database privilege map		

If a `parent` group is specified, it may not include a structs definition (since project groups must be at the top level of a struct heirarchy). The `name` (and `label`, if provided) must not be in use by any group siblings, or the action will fail.

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