

# 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 source file into a model.

Property	Value	Req	Default
action	"struct_buffer_import"	?	
model	model group specifier	?	
origin	origin name	?	
object_id	object ID of data file	?	
format	string	?	
conf	jsonobject		
strict_units	boolean		false

If the `mn` column is an integer it will be interpreted as a literal mnemonic ID. Otherwise the name will be parsed from this format:

```
<name>[(<unit>[;n0=v0|n1=v1|...])]
```

`<name>` will be used for the mnemonic name lookup. The comparison is case insensitive and any whitespace is treated as a single underscore. `<unit>` is optional. If provided, it must match the unit of an associated mnemonic definition, otherwise an error is thrown. The section after unit defines discrete value mapping.

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
<code>action</code>	<code>"struct_mn_edit"</code>
<code>database</code>	mnemonic definition database specifier
<code>mn</code>	mnemonic ID
<code>aliases</code>	<code>string[]</code> , name/unit pair alias(es) for mnemonic

## STRUCT MN EDIT

Edits one or more properties of a single existing mnemonic.

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

## STRUCT MN MERGE

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

## STRUCT INT OPEN

Opens one or more intervals in a model.

---

# STRUCT INT CLOSE

Closes one or more intervals in a model.

---

## Schema Actions

# STRUCT CREATE

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

## STRUCT CREATE PROJECT

Creates a structs project group.

Property	Value	Req	Default
action	<code>"struct_create"</code>	?	
create	<code>"project"</code>	?	
parent	<a href="#">group specifier</a>		
name	<code>string</code>	?	
label	<code>string</code>		name
desc	<code>string</code>		label

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.

## STRUCT CREATE CATEGORY

Creates a structs category group.

Property	Value	Req	Default
action	<code>"struct_create"</code>	?	
create	<code>"category"</code>	?	
parent	<a href="#">group specifier</a>	?	
name	<code>string</code>	?	
label	<code>string</code>		name
desc	<code>string</code>		label

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	<code>"struct_create"</code>	?	
create	<code>"model"</code>	?	
parent	group specifier	?	
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 ORIGIN

Creates a structs origin group.

Property	Value	Required	Default
action	<code>"struct_create"</code>	?	
create	<code>"origin"</code>	?	
model	group specifier	?	
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		
partition	boolean or <code>{ "from": &lt;start year&gt;, "to": &lt;end year&gt; }</code>		false

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	<code>"struct_create"</code>	?	
create	<code>"def"</code>	?	
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	<code>"struct_create"</code>	?	
create	<code>"event"</code>	?	
group	group specifier	?	
type	<code>"none"</code> , <code>"file"</code> , or <code>"files"</code>		<code>"none"</code>
name	string		<code>"event"</code> , <code>"eventf"</code> , or <code>"eventfs"</code>
label	string		name
desc	string		label
singular	string		<code>"event"</code>
plural	string		singular <code>s</code>
conf	JSON object		
fields	array of field definitions		
teams	team database privilege map		

## STRUCT CREATE NOTEBOOK

Creates a new structs notebook database.

Property	Value	Req	Default
action	<code>"struct_create"</code>	?	
create	<code>"notebook"</code>	?	
parent	group specifier	?	
name	string	?	
label	string		name

Property	Value	Req	Default
desc	string		label
fields	array of <a href="#">field definitions</a>		
teams	team database privilege map		

---

Revision #33

Created 13 July 2022 17:51:06 by Nick Dobson

Updated 5 October 2023 18:14:52 by Matt Dobson