

# Core Events

A core event is a way for an addon to interact with the base software to change or add something, without needing to make any changes to the base code at all.

## How it Works

Core events use [observer design pattern](#), also known as [publisher/subscriber design pattern](#). The "observer" is the **geoAddon** class, and the "subscriber" is each individual addon.

An addon will be automatically subscribed to a core event, if the core event's name is found in the addon's **\$core\_events** var in the **info.php** file, and in the **util.php** file, the addon's util class has a matching method that is named the same as the core event name, prepended with "core\_"<sup>1)</sup>.

In the base code, to *trigger a core event*, it will look something like this:

```
geoAddon::triggerDisplay('event_name',$vars, geoAddon::FILTER);
```

### Breaking that call down:

- **triggerDisplay**: triggerDisplay means that what the addon returns is important. There is a sister function, **geoAddon::triggerUpdate()** which does not care what is returned, when that is used it is for *notification purposes only*, anything returned by the addon is ignored<sup>2)</sup>.
- **event\_name**: This is the event name. If the event is for a specific thing, it may start with the class name and function name it is being called from, to make it easier to identify where the event is used.
- **\$vars**: These are the variables that will be passed to the addon when calling the core event's function in util.
- **geoAddon::FILTER**: This is what *type* of core event this is, in this case it is a filter core event. If not specified, the default type is "string" which means all the stuff returned from each addon is concatenated together (separated by the optional 4th parameter). The **geoAddon::RETURN\_STRING** type is the original type of core event, and is one of the reasons the function is named triggerDisplay.

When a core event is triggered (by making a call similar to above) in the base code, the addon system sees which addons are subscribed to that event, and *notifies* each one by calling the before mentioned method in the util class of that addon. Depending on the core event's type, it may or may not do something with what is returned by the addon.

## Core Event Types

Below the different core event types are listed. There are more core event types besides what is listed below (such as *auth* core events), but all of those still fall into the more broader based types based on what they are expected to return:

Core event type	class constant used for trigger	Event name beginning <sup>3)</sup>	Description
Notification	N/A <sup>4)</sup>	notify_	This is a notification to let the addon know that something is happening, so that the addon can do something it may need to do at that time. This type is used when an addon might want to manipulate something more complex than a simple string. For instance the event <i>notify_display_page</i> , happens at the top of <i>geoSite→display_page()</i> in order to allow an addon to manipulate the view class template vars, or to manipulate the <i>geoSite</i> class's variables. It may also be used when it is desirable to do some type of logging.
Filter	<code>geoAddon::FILTER</code>	filter_	A string is passed to the addon as the only variable. The addon is expected to filter/manipulate the string, then return the filtered string (or return the string unmodified if the addon doesn't want to change it).
Overload	<code>geoAddon::OVERLOAD</code>	overload_ then the class and method name being overloaded	This allows an addon to take over a specific function and do things its own way. A overload event allows you to replace a function with your own, where a filter event would happen at the end of a function and allow you to modify what the function is about to return. If the addon returns the constant <code>geoAddon::NO_FILTER</code> then the calling function keeps going on its merry way. Otherwise, if anything else is returned, then the calling function will return that value, effectively skipping what would normally be done by that function. The addon is responsible for returning the same stuff the original function would return, and for doing any input checking that might be needed, in other words it is responsible for doing everything the original function would have done.
Return a String	<code>geoAddon::RETURN_STRING</code> or <code>geoAddon::ARRAY_STRING</code>	it varies	Addon is expected to return a string (that will usually be used to display on the page). In the case of <code>geoAddon::RETURN_STRING</code> : The results of each addon will be concatenated together, sometimes separated by some string that is passed as the optional 4th parameter to <i>triggerDisplay()</i> . In the case of <code>geoAddon::ARRAY_STRING</code> : the results of each addon are returned in an array, one array entry per addon.
Return an Array	<code>geoAddon::ARRAY_ARRAY</code>	it varies	The addon is expected to return an array, if it returns anything other than an array, the returned value is ignored.

Core event type	class constant used for trigger	Event name beginning <sup>3)</sup>	Description
Return boolean true	geoAddon::RETURN_TRUE	it varies	If the addon returns true, no other addons are processed, and boolean true is passed back. If the addon returns anything else, it will be ignored and the rest of the addons will be processed. If all addons are processed and none return true, the trigger call will return boolean false.
Return boolean false	geoAddon::RETURN_FALSE	it varies	Acts much like return true type, but opposite: if addon returns false, no other addons are processed and triggerDisplay returns false. If no addons return false, triggerDisplay returns true.
Return not-null value	geoAddon::NOT_NULL	it varies	Related to return true and return false types, but in this case if the addon returns anything besides strict null, it stops processing addons and returns that as the results of triggerDisplay. This is used mostly in authentication type events, where you can return true to allow, false to say not allowed, or null if indifferent.

1)

so that it is clear the function is called as a core event

2)

although the addon can still affect things, for instance an addon might manipulate the template vars stored in the geoView class

3)

Core events will sometimes be pre-pended with something so that it is obvious what type of core event it is. It is not an absolute rule, just a *rule of thumb* that the event name will start with what is noted.

4)

No class constant is passed during trigger, because this is the one and only type of core event that is triggered using geoAddon::triggerUpdate() which does not have a variable for event type.

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