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# Orchestration Server Developer's Guide

Elasticsearch Connector

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# Elasticsearch Connector

Starting with 8.1.400.58, ORS enhances its **Elasticsearch** real-time reporting capabilities. **Enhancements** include a new Orchestration SCXML extension, **elasticconnector**. The purpose of elasticconnector SCXML extension is to:

- Remove management of connectivity to Elasticsearch cluster from the SCXML strategy.
- Provide simplified access to Elasticsearch APIs.

## elasticconnector Action Elements

ORS supports the following new Action elements that can be used with Composer's **SCXML State block**:

### <createindextemplate>

- Execution of this Action results in a request to Elasticsearch only if the current ORS did not execute such action with the same template name and the same or higher order.
- If the pattern in the “index” attribute matches the “performance” daily index (like “perf\*”, “performance-\*”, and so on), the action will fail with the appropriate error and error description.
- If the pattern in the “index” attribute matches the “session” daily index and “order” is defined as 0, action will fail with the appropriate error and error description. As a general rule – the template always has order=0 and only one template is created per “session” and “performance” indexes; custom templates always have to have order>0.

### [+] createindextemplate

| Name      | Required | Type                | Def. value | Valid values  | Description  |
|-----------|----------|---------------------|------------|---|--|
| requestid | False    | Location expression | none       | Any valid location expression, which represents a string. | This is the location for the request ID that is returned as part of this request. Standard attribute of all Orchestration actions. |
| name      | True     | Value expression    | none       | Any value expression that returns a valid string.         | template name  |
| index     | True     | Value expression    | none       | Any value expression that returns a valid string.         | Elasticsearch index name (pattern).  |
|           |          |                     |            |   |  |

|         |       |                  |      |  |   |
|---------|-------|------------------|------|--|---|
| order   | False | Value expression | 0    | Any value expression that returns a valid integer. | Elasticsearch template order.   |
| type    | True  | Value expression | none | Any value expression that returns a valid string.  | Elasticsearch type name.  |
| mapping | True  | Value expression | none | Any valid ECMAScript object.                       | Object that represents the whole body of Elasticsearch property of mappings.type in the mapping request.  |
| timeout | False | Value expression | 0    | Any value expression that returns a valid integer. | The integer returned must be interpreted as a time interval in milliseconds. This interval begins when action is executed. A failed and timed out fetch returns the error.elasticconnector.createindex event. |

## <createdoc>

Execution of this Action results in an add document request from ORS to Elasticsearch (via the index API).

## [+] createdoc

| Name      | Required | Type                | Def. value | Valid values   | Description  |
|-----------|----------|---------------------|------------|--|--|
| requestid | false    | Location expression | none       | Any valid location expression which represents a string. | This is the location for the request ID that is returned as part of this request. Standard attribute of all Orchestration actions.   |
| id        | false    | Value expression    | none       | Any value expression that returns a valid string         | Elasticsearch document within an index. If not specified, an ID will be automatically generated. Explicit ID assignment and automatic ID generation cannot be mixed within same index. |
| index     | true     | Value expression    | none       | Any value expression that returns a valid string.        | Elasticsearch index name   |
|           |          |                     |            |  |  |

|          |       |                    |       |  |  |
|----------|-------|--------------------|-------|--|--|
| type     | true  | Value expression   | none  | Any value expression that returns a valid string.  | Elasticsearch type name  |
| request  | true  | Value expression   | none  | Any valid ECMAScript object                        | Object that represents the whole body of an Elasticsearch create document API request.   |
| bulk     | false | Boolean expression | false | true,false   | If true, Elasticsearch request will be just added to the ORS bulk request buffer and the <code>elasticconnector.createdoc.done</code> event will be raised immediately. If false, a request to create document will be sent to Elasticsearch and the corresponding event and <code>elasticconnector.createdoc.done</code> or <code>error.elasticconnector.createdoc</code> will be raised after a response from Elasticsearch. |
| timeout  | false | Value expression   | 0     | Any value expression that returns a valid integer. | The integer returned must be interpreted as a time interval in milliseconds. This interval begins when action is executed. A failed and timed out fetch returns the <code>error.elasticconnector.createdoc</code> event.   |
| settings | false | Value expression   | none  | Any valid ECMA script object.                      | Object that represents the body of the Elasticsearch <code>/_settings</code> index API request.  |

The settings attribute has been introduced in version 8.1.400.64. For more information, see [ORS Options for Elasticsearch 5.3](#), Index Settings for Custom Indexes section.

## <updatedoc>

Execution of this Action results in an update document request from ORS to Elasticsearch (via update API).

## [+] updatedoc

| Name      | Required | Type                | Def. value | Valid values   | Description  |
|-----------|----------|---------------------|------------|--|--|
| requestid | false    | Location expression | none       | Any valid location expression which represents a string. | This is the location for the request ID that is returned as part of this request. Standard attribute of all Orchestration actions. |

|          |       |                    |                              |  |  |
|----------|-------|--------------------|------------------------------|--|--|
| id       | true  | Value expression   | none                         | Any value expression that returns a valid string.  | Elasticsearch document ID within an index.   |
| index    | false | Value expression   | Current session daily index. | Any value expression that returns a valid string.  | Elasticsearch index name. If not specified, current session daily index will be used. Also, in this case, the type attribute must be not specified, or the action will fail.   |
| type     | false | Value expression   | "session"                    | Any value expression that returns a valid string.  | Elasticsearch type name. If not specified, the "index" attribute should be not specified as well and "session" type will be used.  |
| request  | true  | Value expression   | none                         | Any valid ECMAScript object                        | Object that represents the whole body of an Elasticsearch update document API request.   |
| bulk     | false | Boolean expression | true                         | true,false   | If true, Elasticsearch request will be just added to the ORS bulk request buffer and <code>elasticconnector.updatedoc.done</code> event will be raised immediately. If false, a request to update document will be sent to Elasticsearch and corresponding event <code>elasticconnector.updatedoc.done</code> or <code>error.elasticconnector.updatedoc</code> will be raised after response from Elasticsearch. |
| timeout  | false | Value expression   | 0                            | Any value expression that returns a valid integer. | The integer returned is interpreted as a time interval in milliseconds. This interval begins when the action is executed. A failed and timed out fetch returns the <code>error.elasticconnector.updatedoc</code> event.  |
| settings | false | Value expression   | none                         | Any valid ECMA script object.                      | Object that represents the body of the Elasticsearch <code>/_settings</code> index API request.  |

The settings attribute has been introduced in version 8.1.400.64. For more information, see [ORS Options for Elasticsearch 5.3](#), Index Settings for Custom Indexes section.

## &lt;deletedoc&gt;

Execution of this Action results in a delete document request from ORS to Elasticsearch (via delete API).

**[+] deletedoc**

| Name      | Required | Type                | Def. value | Valid values   | Description   |
|-----------|----------|---------------------|------------|--|---|
| requestid | false    | Location expression | none       | Any valid location expression which represents a string. | This is the location for the request ID that is returned as part of this request. Standard attribute of all Orchestration actions.  |
| id        | true     | Value expression    | none       | Any value expression that returns a valid string.        | Elasticsearch document ID within an index.  |
| index     | true     | Value expression    | none       | Any value expression that returns a valid string.        | Elasticsearch index name  |
| type      | true     | Value expression    | none       | Any value expression that returns a valid string.        | Elasticsearch type name   |
| bulk      | true     | Boolean expression  | true       | true,false   | If true, Elasticsearch request will be added to ORS bulk request buffer and <code>elasticconnector.deletedoc.done</code> will be raised immediately. If false, request to delete document will be sent to Elasticsearch and corresponding <code>elasticconnector.deletedoc.done</code> or <code>error.elasticconnector.deletedoc</code> event will be raised after a response from Elasticsearch. |
| timeout   | false    | Value expression    | 0          | Any value expression that returns a valid integer.       | The integer returned is interpreted as a time interval in milliseconds. This interval begins when the action is executed. A failed and timed out fetch returns the <code>error.elasticconnector.deletedoc</code> event.   |

## Events

The following Events are supported:

### [+] Events

```
}
```

| Name                                       | Attributes  | Description   |
|--|-------------|---|
| elasticconnector.createindextemplate.done  |             | This event indicates the success of the request.  |
|  | requestid   | This is the ID of the request.  |
| error.elasticconnector.createindextemplate |             | This indicates that an error occurred while trying to perform the createindextemplate request.  |
|  | requestid   | This is the ID associated with the request.   |
|  | error       | This is the type of error that occurred. The following is a specific error code:<br><br>protocol.errorcode - This represents the protocol-specific errors that occur when the attempting the request. |
|  | description | This is a more detailed description of the error  |
| elasticconnector.createdoc.done            |             | This event indicates the success of the request.  |
|  | id          | This is ID of created document.   |
|  | requestid   | This is the ID of the request.  |
| error.elasticconnector.createdoc           |             | This indicates that an error occurred while trying to perform the createdoc request.  |
|  | requestid   | This is the ID associated with the request.   |
|  | error       | This is the type of error that occurred. The following is a specific error code:<br><br>protocol.errorcode - This represents the protocol-specific errors that occur when the attempting the request. |
|  | description | This is a more detailed description of the error  |
|  |             |   |



|                                  |             |   |
|----------------------------------|-------------|---|
| elasticconnector.updatedoc.done  |             | This event indicates the success of the request.  |
|                                  | Requestid   | This is the ID of the request.  |
| error.elasticconnector.updatedoc |             | This indicates that an error occurred while trying to perform the updatedoc request.  |
|                                  | Requestid   | This is the ID associated with the request.   |
|                                  | Error       | This is the type of error that occurred. The following is a specific error code:<br><br>protocol.errorcode - This represents the protocol-specific errors that occur when the attempting the request. |
|                                  | Description | This is a more detailed description of the error  |
| elasticconnector.deletedoc.done  |             | This event indicates the success of the request.  |
|                                  | Requestid   | This is the ID of the request.  |
| error.elasticconnector.deletedoc |             | This indicates that an error occurred while trying to perform the deletedoc request.  |
|                                  | Requestid   | This is the ID associated with the request.   |
|                                  | Error       | This is the type of error that occurred. The following is a specific error code:<br><br>protocol.errorcode - This represents the protocol-specific errors that occur when the attempting the request. |
|                                  | Description | This is a more detailed description of the error  |