

Index Template V2

...

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あなた誰？

- 検索エンジン周りのお手伝いをしている
フリーランスエンジニア
- 検索技術勉強会主催者
- Apache Solr入門(第2版まで)やデータ分析基盤構築入門の
著者の一人
- Twitter : johtani



なにがV2？

- 7.8で導入された新しいIndex Templateの仕組み
- Composable index templates
 - 直訳:「合成可能なIndex Template」
- これまでのIndex TemplateはDeprecated
- なにがうれしいの？の前に

Index Templateってなに？

- Indexのsettingsやmappingsをインデックスを作るたびに記述するのはめんどくさい
- あらかじめパターンを作っておきたい
- それがIndex Template
- Beatsなどを利用していると実は使っている機能

Index Templateってなに？

```
PUT _template/blog_num_shards
{
  "index_patterns": "blog_*",
  "settings": {
    "index": {
      "number_of_shards": 3
    }
  }
}
```

```
PUT _template/jp_simple_kuromoji
{
  "index_patterns": "jp_*",
  "settings": {
    "index": {
      "analysis": {
        "analyzer": {
          "simple_jp": {
            "type": "custom",
            "tokenizer": "kuromoji_tokenizer"
          }
        }
      }
    }
  }
}
```

Index Templateってなに？

```
PUT blog_2019
```

```
{
  "blog_2019" : {
    "aliases" : { },
    "mappings" : { },
    "settings" : {
      "index" : {
        "routing" : {
          "allocation" : {
            "include" : {
              "_tier_preference" : "data_content"
            }
          }
        }
      },
      "number_of_shards" : "3",
      "provided_name" : "blog_2019",
      "creation_date" : "1608128217073",
      "number_of_replicas" : "1",
      "uuid" : "v2diCGKCTH2ylSEwCKjy_g",
      "version" : {
        "created" : "7100099"
      }
    }
  }
}
```

Index Templateってなに？

- IndexのSettingsやMappingを使いまわしできる
- **Index**名に対して適用してくれるので便利
- Index作成時に明示的に上書きも可能

なんでV2？

- Index Templateの部品化が難しい
- **order**の概念が難しい
- **試す**のにIndex作らないといけない

なにが違うの？

- エンドポイント名(後述)
- テンプレートのコンポーネント化
- 1インデックスに適用できるテンプレートは**1つ**のみ
- お試し可能

作業の流れ

- Component Templateの作成
- Index Templateの作成
- Index Template単体の動作確認
- Index名での動作確認

Component Templateのエンドポイント

- PUT `_component_template/<テンプレート名>`
- GET `_component_template`
 - GET `_component_template/<テンプレート名>`
- DELETE `_component_template/<テンプレート名>`

Component Template

```
PUT _component_template/3_shards?create=false
{
  "template": {
    "settings": {
      "index": {
        "number_of_shards": 3
      }
    }
  }
}
```

```
PUT _component_template/jp_simple_kuromoji
{
  "template": {
    "settings": {
      "index": {
        "analysis": {
          "analyzer": {
            "simple_jp": {
              "type": "custom",
              "tokenizer":
                "kuromoji_tokenizer"
            }
          }
        }
      }
    },
    "_meta": {
      "description": "simpleなKuromoji
        analyzer"
    }
  }
}
```

Index Templateのエンドポイント

- PUT `_index_template/<テンプレート名>`
- GET `_index_template`
 - GET `_index_template/<テンプレート名>`
- DELETE `_index_template/<テンプレート名>`

Index Template

```
PUT _index_template/blog_template
{
  "index_patterns": ["blog_*"],
  "template": {
    "mappings": {
      "properties": {
        "hoge": {
          "type": "text",
          "analyzer": "simple_jp"
        }
      }
    }
  },
  "priority": 100,
  "composed_of": ["jp_simple_kuromoji", "3_shards"]
}
```

Simulateのエンドポイント

- POST `_index_template/_simulate/<テンプレート名>`
 - POST `_index_template/_simulate`
- POST `_index_template/_simulate_index/<インデックス名>`

Simulate Index Template

POST `_index_template/_simulate/blog_template`

```
{
  "template" : {
    "settings" : {
      "index" : {
        "analysis" : {
          "analyzer" : {
            "simple_jp" : {
              "type" : "custom",
              "tokenizer" : "kuromoji_tokenizer"
            }
          }
        },
        "number_of_shards" : "3"
      }
    },
    "mappings" : {
      "properties" : {
        "hoge" : {
          "type" : "text",
          "analyzer" : "simple_jp"
        }
      }
    },
    "aliases" : { }
  },
  "overlapping" : [
    {
      "name" : "blog_num_shards",
      "index_patterns" : [
        "blog_*"
      ]
    }
  ]
}
```


Simulate Index Template

POST _index_template/_simulate

```
{
  "index_patterns": ["jp_*"],
  "template": {
    "mappings": {
      "properties": {
        "hoge": {
          "type": "text",
          "analyzer": "simple_jp"
        }
      }
    }
  },
  "priority": 10,
  "composed_of": ["jp_simple_kuromoji"]
}
```

```
{
  "template" : {
    "settings" : {
      "index" : {
        "analysis" : {
          "analyzer" : {
            "simple_jp" : {
              "type" : "custom",
              "tokenizer" : "kuromoji_tokenizer"
            }
          }
        }
      }
    },
    "mappings" : {
      "properties" : {
        "hoge" : {
          "type" : "text",
          "analyzer" : "simple_jp"
        }
      }
    },
    "aliases" : { }
  },
  "overlapping" : [
    {
      "name" : "jp_simple_kuromoji",
      "index_patterns" : [
        "jp_*"
      ]
    }
  ]
}
```

Simulate Index

POST `_index_template/_simulate_index/blog_2020`

```
{
  "template" : {
    "settings" : {
      "index" : {
        "analysis" : {
          "analyzer" : {
            "simple_jp" : {
              "type" : "custom",
              "tokenizer" : "kuromoji_tokenizer"
            }
          }
        },
        "number_of_shards" : "3"
      }
    },
    "mappings" : {
      "properties" : {
        "hoge" : {
          "type" : "text",
          "analyzer" : "simple_jp"
        }
      }
    },
    "aliases" : { }
  },
  "overlapping" : [
    {
      "name" : "blog_num_shards",
      "index_patterns" : [
        "blog_*"
      ]
    }
  ]
}
```

Kibanaの画面も7.9から利用可能

Index Management

[Indices](#) [Data Streams](#) [Index Templates](#) [Component Templates](#)

[Index Management docs](#)

Use component templates to reuse settings, mappings, and aliases configurations in multiple index templates. [Learn more.](#)

ManagedIn useNot in use

Reload

Create a component template

☐ Name ↑	Usage count	Mappings	Settings	Aliases	Actions
☒ 3_shards	1		✓		...
☐ hoge	Not in use		✓		...
☐ ja_reading_analyzer	Not in use		✓		...
☐ jp_simple_kuromoji	Not in use		✓		...
☒ jp_simple_kuromoji	1		✓		...
☒ jp_simple_kuromoji2	4		✓		...
☒ logs-mappings Managed	1	✓			...
☒ logs-settings Managed	1		✓		...
☒ metrics-mappings Managed	1	✓			...
☒ metrics-settings Managed	1		✓		...

Rows per page: 10

< 1 2 >

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Create component template

1

2

3

4

5

LogisticsIndex settingsMappingsAliasesReview

Logistics

[Component Templates docs](#)

Name

Unique name for this component template.

Name

Version

Number used by external management systems to identify the component template.

Version (optional)

Metadata

Arbitrary information about the template, stored in the cluster state. [Learn more.](#)

☐ Add metadata

Next >

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Create component template

✓

2

3

4

5

LogisticsIndex settingsMappingsAliasesReview

Index settings (optional)

[Index settings docs](#)

Define the behavior of your indices.

Index settings

```
{
  "analysis": {
    "analyzer": {
      "fuga": {
        "type": "custom",
        "tokenizer": "kuromoji_tokenizer"
      }
    }
  }
}
```

Use JSON format: {"number_of_replicas":1}

[< Back](#)[Next >](#)

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Create component template

✓

✓

✓

4

5

Logistics

Index settings

Mappings

Aliases

Review

Aliases (optional)

Set up aliases to associate with your indices.

[Index Aliases docs](#)

Aliases

```
{
}
```

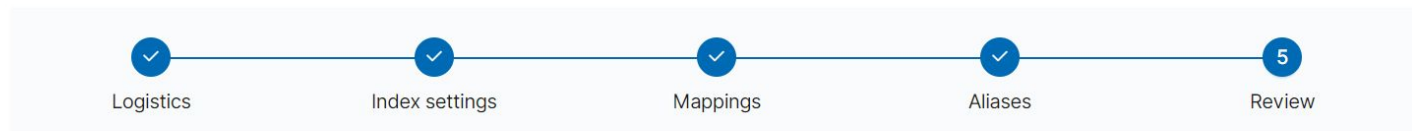
Use JSON format: `{"my_alias":{}}`

< Back

Next >

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Create component template



Review details for 'sample1'

[Summary](#)

Request

Index settings

Yes

Mappings

No

Aliases

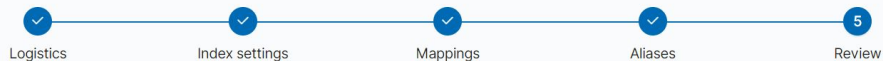
No

[< Back](#)

[✓ Create component template](#)

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Edit component template 'sample1'



Review details for 'sample1'

Summary

[Request](#)

This request will create the following component template.

```
PUT _component_template/sample1
{
  "template": {
    "settings": {
      "index": {
        "analysis": {
          "analyzer": {
            "fuga": {
              "type": "custom",
              "tokenizer": "kuromoji_tokenizer"
            }
          }
        }
      }
    }
  }
}
```

< Back

✓ Save component template

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Stack Management / Index Management

Ingest

Ingest Node Pipelines

Data

Index Management

Index Lifecycle Policies

Snapshot and Restore

Rollup Jobs

Transforms

Remote Clusters

Alerts and Insights

Alerts and Actions

Reporting

Kibana

Index Patterns

Saved Objects

Spaces

Advanced Settings

Stack

License Management

8.0 Upgrade Assistant

Index Management

[Index Management docs](#)

IndicesData StreamsIndex TemplatesComponent Templates

Use index templates to automatically apply settings, mappings, and aliases to indices. [Learn more.](#)

View 1 Reload

Search...

Create template

Name	Index patterns	Components	Data stream	Content	Actions
2021	*_2021	jp_simple_kuromoji2		M S A	...
blog_template	blog_*	jp_simple_kuromoji, jp_simple_kuromoji2, 3_shards		M S A	...
fuga	b*	jp_simple_kuromoji2, jp_simple_kuromoji2		M S A	...
ilm-history Managed	ilm-history-3*			M S A	...
logs Managed	logs-*.*	logs-mappings, logs-settings	✓	None	...
metrics Managed	metrics-*.*	metrics-mappings, metrics-settings	✓	None	...
synthetics Managed	synthetics-*.*	synthetics-mappings, synthetics-settings	✓	None	...

Rows per page: 20 < 1 >

Legacy index templates

Search...

Create legacy template

Name	Index patterns	ILM policy	Content	Actions
hoge	hoge-*		M S A	...
jp_simple_kuromoji	jp_*		M S A	...
metricbeat-7.10.0	metricbeat-7.10.0-*	metricbeat	M S A	...

Rows per page: 20 < 1 >

Kibanaの画面も7.9から利用可能

Create template

1

2

3

4

5

6

LogisticsComponent templatesIndex settingsMappingsAliasesReview template

[Index Templates docs](#)

Logistics

Name
A unique identifier for this template.

Index patterns
The index patterns to apply to the template.

Data stream
The template creates data streams instead of indices. [Learn more.](#)

Priority
Only the highest priority template will be applied.

Version
A number that identifies the template to external management systems.

_meta field
Use the _meta field to store any metadata you want.

☐ Add metadata

[Next >](#)

Name

sample1

Index patterns

sample_*

Spaces and the characters [/? * < >] are not allowed.

☐ Create data stream

Priority (optional)

Version (optional)

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Create template

1

Logistics

2

Component templates

3

Index settings

4

Mappings

5

Aliases

6

Review template

Component templates (optional)

[Component templates docs](#)

Component templates let you save index settings, mappings and aliases and inherit from them in index templates.

Components selected: 1

= 3_shards M S A

Search component templates

Filter 3

3_shards M S A ✓

hoge M S A +

ja_reading_analyzer M S A +

jp_simple_kuromoji M S A +

jp_simple_kuromoji M S A +

jp_simple_kuromoji2 M S A +

logs-mappings M S A +

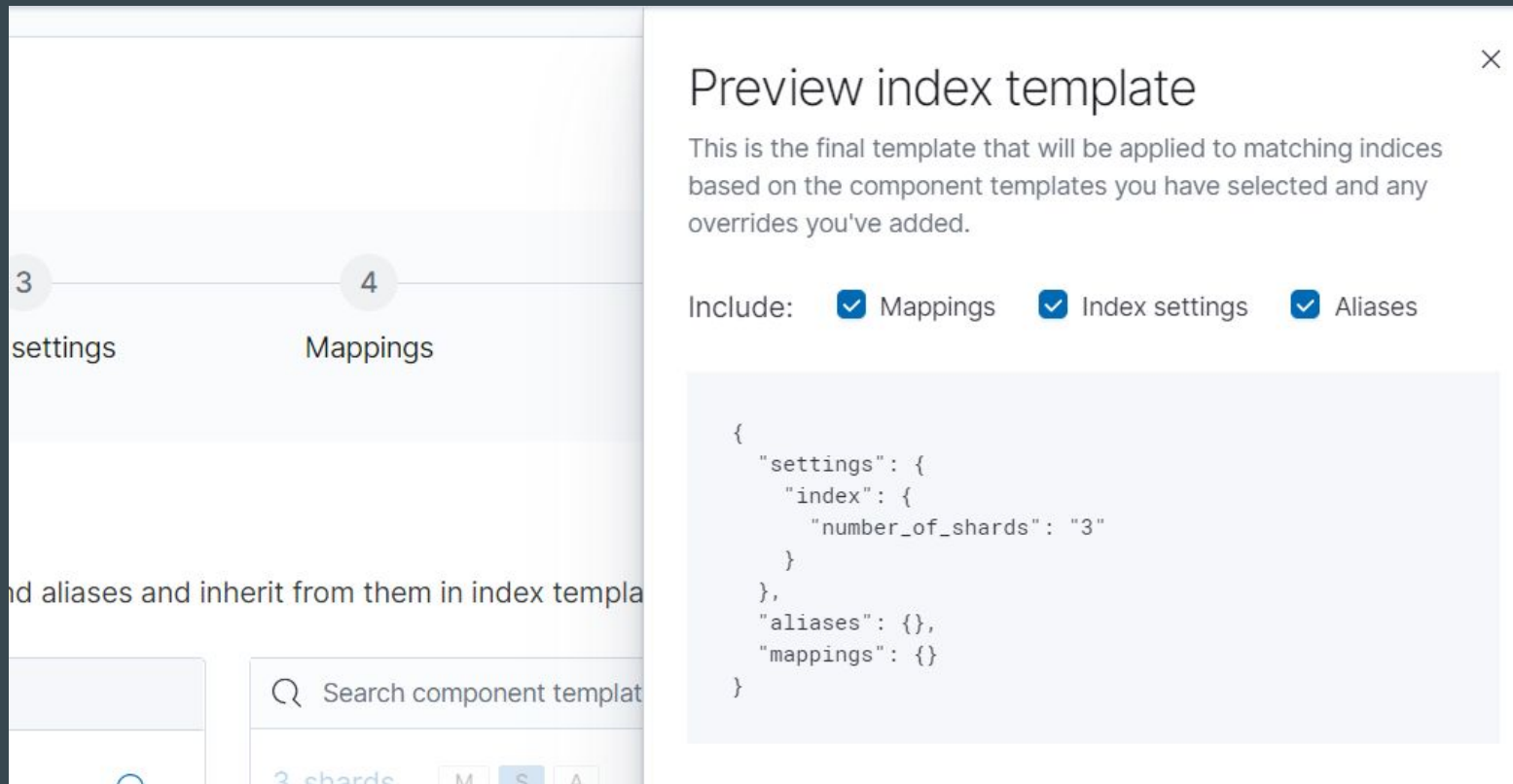
logs-settings M S A +

< Back

Next >

Preview index template

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The screenshot shows the Kibana interface with a 'Preview index template' dialog box open. The dialog has a close button (X) in the top right corner. It contains a description of the template and a list of included components. Below this is a code block showing the final JSON template.

3 settings 4 Mappings

and aliases and inherit from them in index template

Search component template

3 shards M S A

Preview index template

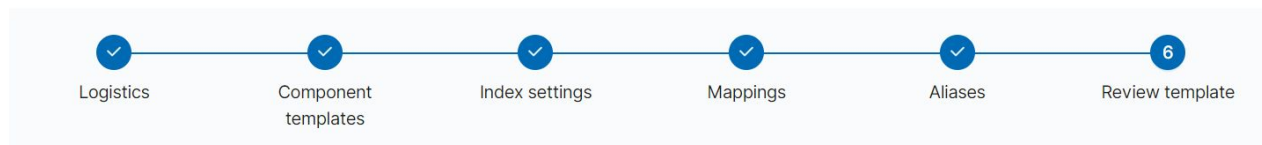
This is the final template that will be applied to matching indices based on the component templates you have selected and any overrides you've added.

Include: ☒ Mappings ☒ Index settings ☒ Aliases

```
{
  "settings": {
    "index": {
      "number_of_shards": "3"
    }
  },
  "aliases": {},
  "mappings": {}
}
```

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Create template



Review details for 'sample1'

[Summary](#)

[Preview](#)

[Request](#)

Index pattern

sample_*

Priority

None

Version

None

Component templates

3_shards

Index settings

No

Mappings

No

Aliases

No

[< Back](#)

[✓ Create template](#)

まとめ

- 今までのIndex TemplateはDeprecated
- コンポーネント化できて便利
- Simulate APIで簡単にお試し
- より詳細は今晚公開予定のアドベントカレンダーの記事をご覧ください