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# **Chapter 1**

# SaaS

# Overview

This NTO model a software-as-a-service offering. It defines entities for both

- templates/offerings
- instantiated services

# **Chapter 2**

# **Module Documentation**

# 2.1 Entities

# 2.1.0.1 ogit/SaaS/Component

Entities of this kind form the catalogue of components a SaaS Deployment can consist of

• id: http://www.purl.org/ogit/SaaS/Component

• valid-from: Tue Jan 14 00:00:00 UTC 2020

creator: FCOscope: NTO

· parent: ogit/Node

# attributes

- · mandatory:
  - ogit/Version/major
  - ogit/Version/minor
  - ogit/Version/patch
  - ogit/name
- optional:
  - ogit/description
  - ogit/status

# incoming edges

• ogit/configures <= ogit/SaaS/ConfigurationTemplate

# 2.1.0.2 ogit/SaaS/Deployment

represents a Deployment in any possible state. Will be instantiated from a DeploymentTemplate

• id: http://www.purl.org/ogit/SaaS/Deployment

• valid-from: Tue Jan 14 00:00:00 UTC 2020

creator: FCOscope: NTO

· parent: ogit/Node

#### attributes

- · mandatory:
  - ogit/id
  - ogit/status
- · optional:
  - ogit/comment
  - ogit/sourceld
  - ogit/status

# incoming edges

• ogit/contains <= ogit/SaaS/Deployment

# outgoing edges

- ogit/contains => ogit/SaaS/ComponentInstance
- ogit/contains => ogit/SaaS/Deployment

#### 2.1.0.3 ogit/SaaS/DeploymentTemplate

Specifies templates that can be instantiated as a Deployment. When instantiated all contained Configuration ← Templates will be instantiated as ComponentConfigs

 $\bullet \ \, \textbf{id} : \\ \texttt{http://www.purl.org/ogit/SaaS/DeploymentTemplate} \\$ 

valid-from: Tue Jan 14 00:00:00 UTC 2020

creator: FCOscope: NTO

• parent: ogit/Node

# attributes

- · mandatory:
  - ogit/Version/major
  - ogit/Version/minor
  - ogit/Version/patch
  - ogit/name
- · optional:
  - ogit/description
  - ogit/status

# outgoing edges

• ogit/contains => ogit/SaaS/ConfigurationTemplate

# 2.1.0.4 ogit/Attachment

This entity defines a file attachment that an IT service, issue, task or a ticket might have. The attachment itself is not saved in GraphIT, instead it contains an external url link for it.

• id: http://www.purl.org/ogit/Attachment

valid-from: Thu May 21 00:00:00 UTC 2015

· creator: Peter Larem

· scope: SGO

· parent: ogit/Node

#### attributes

- optional:
  - ogit/accessControl
  - ogit/content
  - ogit/createdAt
  - ogit/creator
  - ogit/id
  - ogit/lastUpdatedAt
  - ogit/lastUpdatedBy
  - ogit/name
  - ogit/size
  - ogit/sourceTable
  - ogit/type
  - ogit/url

#### outgoing edges

• ogit/belongs => ogit/SaaS/ComponentInstance

# 2.1.0.5 ogit/Auth/Account

An account is used for authentication and authorization.

• id: http://www.purl.org/ogit/Auth/Account

· valid-from: Mon Jan 01 00:00:00 UTC 2018

· creator: arago GmbH

· scope: NTO

· parent: ogit/Node

#### attributes

- · mandatory:
  - ogit/Auth/Account/type
  - ogit/name
  - ogit/status
- · optional:
  - ogit/Auth/Account/acceptedPrivacy
  - ogit/Auth/Account/acceptedProjectTerms
  - ogit/Auth/Account/acceptedTerms
  - ogit/Auth/Account/allowCookies
  - ogit/Auth/Account/statusReason
  - ogit/email

# outgoing edges

• ogit/Auth/uses => ogit/SaaS/ComponentInstance

# 2.1.0.6 ogit/SaaS/ComponentInstance

An instance of a Component within a Deployment

• id: http://www.purl.org/ogit/SaaS/ComponentInstance

valid-from: Tue Jan 14 00:00:00 UTC 2020

creator: FCOscope: NTO

parent: ogit/Node

#### attributes

- mandatory:
  - ogit/id
- · optional:
  - ogit/sourceld
  - ogit/status

# incoming edges

- ogit/Auth/uses <= ogit/Auth/Account
- ogit/belongs <= ogit/Attachment
- ogit/contains <= ogit/SaaS/Deployment

# outgoing edges

• ogit/generates => ogit/Timeseries

# 2.1.0.7 ogit/Timeseries

A time series is a sequence of data points, measured typically at successive points in time spaced at uniform time intervals.

- id: http://www.purl.org/ogit/Timeseries
- valid-from: Thu May 21 00:00:00 UTC 2015
- · creator: Peter Larem
- scope: SGO
- parent: ogit/Node

# attributes

- · optional:
  - ogit/description
  - ogit/instance
  - ogit/isMutable
  - ogit/isPermanent
  - ogit/name
  - ogit/unit

# incoming edges

• ogit/generates <= ogit/SaaS/ComponentInstance

# 2.1.0.8 ogit/SaaS/ConfigurationTemplate

Specifies a certain installation flavor of a Component. Might fix same configuration parameters and provide defaults for some others. Will be used within DeploymentTemplate to form a deployable template of several components

• id: http://www.purl.org/ogit/SaaS/ConfigurationTemplate

• valid-from: Tue Jan 14 00:00:00 UTC 2020

creator: FCOscope: NTO

• parent: ogit/Node

# attributes

- · mandatory:
  - ogit/id
- · optional:
  - ogit/description

# incoming edges

• ogit/contains <= ogit/SaaS/DeploymentTemplate

# outgoing edges

• ogit/configures => ogit/SaaS/Component

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# 2.2 Verbs

# 2.2.0.1 ogit/contains

This relationship indicates that something is part of something else. see also "includes"

```
• id: http://www.purl.org/ogit/contains
```

· valid-from: Thu May 21 00:00:00 UTC 2015

· creator: Peter Larem

#### **Allowed Connection**

• ogit/SaaS/Deployment => ogit/SaaS/ComponentInstance

- ogit/SaaS/Deployment => ogit/SaaS/Deployment
- ogit/SaaS/DeploymentTemplate => ogit/SaaS/ConfigurationTemplate

#### 2.2.0.2 ogit/generates

Verb indicating if an entity generates another entity.

```
• id: http://www.purl.org/ogit/generates
```

· valid-from: Thu May 21 00:00:00 UTC 2015

· creator: Peter Larem

#### **Allowed Connection**

ogit/SaaS/ComponentInstance => ogit/Timeseries

# 2.2.0.3 ogit/configures

The from entity, contains configuration data for the to entity

```
• id: http://www.purl.org/ogit/configures
```

valid-from: Mon Apr 27 00:00:00 UTC 2015

• creator: cwalker@arago.de

#### Allowed Connection

• ogit/SaaS/ConfigurationTemplate => ogit/SaaS/Component

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# 2.2.0.4 ogit/belongs

Verb showing if one entity belongs to another.

• id: http://www.purl.org/ogit/belongs

• valid-from: Thu May 21 00:00:00 UTC 2015

· creator: Peter Larem

# **Allowed Connection**

• ogit/Attachment => ogit/SaaS/ComponentInstance

# 2.2.0.5 ogit/Auth/uses

Denotes use of an Application.

• id: http://www.purl.org/ogit/Auth/uses

• valid-from: Mon Jan 01 00:00:00 UTC 2018

· creator: arago GmbH

#### **Allowed Connection**

• ogit/Auth/Account => ogit/SaaS/ComponentInstance

# 2.3 Attributes

```
2.3.0.1 ogit/comment
```

Contains a comment.

```
• id: http://www.purl.org/ogit/comment
```

• valid-from: Mon Jul 27 00:00:00 UTC 2015

· creator: Aymen Ayoub

used

- · optional:
  - ogit/SaaS/Deployment

#### 2.3.0.2 ogit/email

An email address.

```
• id: http://www.purl.org/ogit/email
```

• valid-from: Thu May 21 00:00:00 UTC 2015

· creator: Peter Larem

used

- · optional:
  - ogit/Auth/Account

# 2.3.0.3 ogit/Version/major

major version according to https://semver.org/

```
• id: http://www.purl.org/ogit/Version/major
```

• valid-from: Fri May 25 00:00:00 UTC 2018

• creator: fotto@arago.de

- mandatory:
  - ogit/SaaS/Component
  - ogit/SaaS/DeploymentTemplate

#### 2.3.0.4 ogit/sourceld

The Id of the source system.

```
• id: http://www.purl.org/ogit/sourceId
```

· valid-from: Thu Jun 11 00:00:00 UTC 2015

· creator: Peter Larem

used

- · optional:
  - ogit/SaaS/ComponentInstance
  - ogit/SaaS/Deployment

#### 2.3.0.5 ogit/url

Contains an URL (unified resource locator)

```
• id: http://www.purl.org/ogit/url
```

· valid-from: Thu May 21 00:00:00 UTC 2015

· creator: Peter Larem

used

- · optional:
  - ogit/Attachment

# 2.3.0.6 ogit/isPermanent

If value equals "true" vertex can not be updated or deleted. E.g. after a service is provisioned.

```
• id: http://www.purl.org/ogit/isPermanent
```

• valid-from: Fri Mar 05 00:00:00 UTC 2021

· creator: Vitaly Teremasov

- · optional:
  - ogit/Timeseries

#### 2.3.0.7 ogit/unit

Unit of measurement of some value.

• id: http://www.purl.org/ogit/unit

· valid-from: Thu May 21 00:00:00 UTC 2015

· creator: Peter Larem

#### used

- · optional:
  - ogit/Timeseries

#### 2.3.0.8 ogit/status

A status for an entity. At this level of specification no list of values is specified. However, applications using this attribute are expected to allow only a fixed list of values that seems usefual in the application's semantic context.

```
• id: http://www.purl.org/ogit/status
```

valid-from: Thu May 21 00:00:00 UTC 2015

· creator: Peter Larem

#### used

- · mandatory:
  - ogit/Auth/Account
  - ogit/SaaS/Deployment
- · optional:
  - ogit/SaaS/Component
  - ogit/SaaS/ComponentInstance
  - ogit/SaaS/Deployment
  - ogit/SaaS/DeploymentTemplate

#### 2.3.0.9 ogit/createdAt

Defines a point in time when a ticket/incident/event etc was created or recorded.

- id: http://www.purl.org/ogit/createdAt
- · valid-from: Thu May 21 00:00:00 UTC 2015
- · creator: Peter Larem

- · optional:
  - ogit/Attachment

#### 2.3.0.10 ogit/accessControl

The access control level of this Node. Value could mean different things to different applications / policies. Initial intent is that policies would treat "public-read" (inspired by Amazon AWS S3 ACLs) to mean anyone would have read-only access to this node.

```
• id: http://www.purl.org/ogit/accessControl
```

• valid-from: Thu Mar 26 00:00:00 UTC 2015

· creator: Chris Walker

used

- · optional:
  - ogit/Attachment

# 2.3.0.11 ogit/Auth/Account/statusReason

Status Reason of an ogit/Auth/Account

```
• id: http://www.purl.org/ogit/Auth/Account/statusReason
```

valid-from: Mon Jan 01 00:00:00 UTC 2018

· creator: arago GmbH

used

- · optional:
  - ogit/Auth/Account

# 2.3.0.12 ogit/Version/patch

patch version according to https://semver.org/

```
• id: http://www.purl.org/ogit/Version/patch
```

valid-from: Fri May 25 00:00:00 UTC 2018

• creator: fotto@arago.de

- · mandatory:
  - ogit/SaaS/Component
  - ogit/SaaS/DeploymentTemplate

#### 2.3.0.13 ogit/content

A string holding any type of content: plain string, XML fragments, RDF documents, ...

```
• id: http://www.purl.org/ogit/content
```

valid-from: Thu May 21 00:00:00 UTC 2015

· creator: Peter Larem

#### used

- · optional:
  - ogit/Attachment

# 2.3.0.14 ogit/Auth/Account/type

Type of an account. Values: person, application

- id: http://www.purl.org/ogit/Auth/Account/type
- valid-from: Mon Jan 01 00:00:00 UTC 2018
- · creator: arago GmbH

#### used

- · mandatory:
  - ogit/Auth/Account

# 2.3.0.15 ogit/name

Contains a name.

- id: http://www.purl.org/ogit/name
- valid-from: Thu May 21 00:00:00 UTC 2015
- · creator: Peter Larem

- mandatory:
  - ogit/Auth/Account
  - ogit/SaaS/Component
  - ogit/SaaS/DeploymentTemplate
- · optional:
  - ogit/Attachment
  - ogit/Timeseries

#### 2.3.0.16 ogit/description

Contains a description.

• id: http://www.purl.org/ogit/description

· valid-from: Thu May 21 00:00:00 UTC 2015

· creator: Peter Larem

#### used

- · optional:
  - ogit/SaaS/Component
  - ogit/SaaS/ConfigurationTemplate
  - ogit/SaaS/DeploymentTemplate
  - ogit/Timeseries

# 2.3.0.17 ogit/Auth/Account/acceptedProjectTerms

Flag about whether HIRO Project terms were accepted

- id: http://www.purl.org/ogit/Auth/Account/acceptedProjectTerms
- valid-from: Mon Jan 01 00:00:00 UTC 2018
- · creator: arago GmbH

#### used

- · optional:
  - ogit/Auth/Account

# 2.3.0.18 ogit/Auth/Account/acceptedTerms

Flag about whether usage terms were accepted

- id: http://www.purl.org/ogit/Auth/Account/acceptedTerms
- valid-from: Mon Jan 01 00:00:00 UTC 2018
- · creator: arago GmbH

- optional:
  - ogit/Auth/Account

#### 2.3.0.19 ogit/Version/minor

minor version according to https://semver.org/

• id: http://www.purl.org/ogit/Version/minor

· valid-from: Fri May 25 00:00:00 UTC 2018

• creator: fotto@arago.de

#### used

- · mandatory:
  - ogit/SaaS/Component
  - ogit/SaaS/DeploymentTemplate

#### 2.3.0.20 ogit/lastUpdatedBy

Defines the last person or process who updated an entity.

```
• id: http://www.purl.org/ogit/lastUpdatedBy
```

• valid-from: Mon Jul 20 00:00:00 UTC 2015

· creator: Aymen Ayoub

used

- · optional:
  - ogit/Attachment

# 2.3.0.21 ogit/type

Type of an an entity.

- id: http://www.purl.org/ogit/type
- valid-from: Thu May 21 00:00:00 UTC 2015
- · creator: Peter Larem

- · optional:
  - ogit/Attachment

#### 2.3.0.22 ogit/Auth/Account/allowCookies

Flag about whether cookies are allowed

```
• id: http://www.purl.org/ogit/Auth/Account/allowCookies
```

• valid-from: Mon Jan 01 00:00:00 UTC 2018

· creator: arago GmbH

used

- · optional:
  - ogit/Auth/Account

# 2.3.0.23 ogit/isMutable

True if the value can be changed. E.g. after a service is provisioned.

```
• id: http://www.purl.org/ogit/isMutable
```

valid-from: Thu May 21 00:00:00 UTC 2015

· creator: Peter Larem

used

- · optional:
  - ogit/Timeseries

# 2.3.0.24 ogit/sourceTable

Contains the source table, that stores where the data are coming from.

```
• id: http://www.purl.org/ogit/sourceTable
```

valid-from: Thu Aug 20 00:00:00 UTC 2015

• creator: Aymen Ayoub

- · optional:
  - ogit/Attachment

#### 2.3.0.25 ogit/creator

Creator of an entity.

```
• id: http://www.purl.org/ogit/creator
```

• valid-from: Thu Aug 20 00:00:00 UTC 2015

· creator: Aymen Ayoub

#### used

- optional:
  - ogit/Attachment

# 2.3.0.26 ogit/lastUpdatedAt

Defines latest date and time when a ticket or it's comment was updated. The format of this value could be according to ISO 8601.

```
• id: http://www.purl.org/ogit/lastUpdatedAt
```

· valid-from: Thu May 21 00:00:00 UTC 2015

· creator: Peter Larem

#### used

- · optional:
  - ogit/Attachment

# 2.3.0.27 ogit/id

#### General id.

```
• id: http://www.purl.org/ogit/id
```

• valid-from: Thu May 21 00:00:00 UTC 2015

· creator: Peter Larem

- mandatory:
  - ogit/SaaS/ComponentInstance
  - ogit/SaaS/ConfigurationTemplate
  - ogit/SaaS/Deployment
- optional:
  - ogit/Attachment

#### 2.3.0.28 ogit/Auth/Account/acceptedPrivacy

Flag about whether privacy terms were accepted

```
• id: http://www.purl.org/ogit/Auth/Account/acceptedPrivacy
```

· valid-from: Mon Jan 01 00:00:00 UTC 2018

· creator: arago GmbH

used

- · optional:
  - ogit/Auth/Account

2.3.0.29 ogit/size

The size, e.g. of a file.

- id: http://www.purl.org/ogit/size
- valid-from: Thu Mar 26 00:00:00 UTC 2015
- · creator: arago Technologies

used

- optional:
  - ogit/Attachment

2.3.0.30 ogit/instance

Defines the name of an instance.

- id: http://www.purl.org/ogit/instance
- valid-from: Wed Aug 03 00:00:00 UTC 2016
- creator: Philipp Pelchmann

- · optional:
  - ogit/Timeseries