

Application Structure Resources - 1.23

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Glossary

Term	Definition
Application	An application represents an application as a measurable object. Each application snapshot is a measure point of an application.
Application Snapshot	An application snapshot is a measure point of an application. It is made up of a set of data (results, objects, etc.) computed and frozen at a given time
Attachment	A JSON content attached to an application, it can be a list of frameworks, a survey, etc.
Category	A tag belongs to a category . A category is a set of tags.
Domain	A domain is an identifier of a database. It is defined with a schema name and a connection string to a DBMS.
Module	A module represents a module as a measurable object. Each snapshot of a module is part of an application snapshot.
Module Snapshot	A module snapshot is a measure point of a module. It is made up of a set of data (results, objects, etc.) computed and frozen at a given time. A module snapshot is a part of an application snapshot.
System	A system represents a group of applications.
Tag	A tag is a keyword that can be assigned to an application.

Technology	A subset of source code belonging to a technology (i.e. JEE code , .NET code, ABAP code, etc.)
Tree Node	A structure that organizes application, modules, and components in a tree

Domain

URI Templates

HTTP Action	Media Type	URI Templates	Description
GET	application/json	/	Array of domains
GET	application/json	{Domain}	A domain content

JSON Representation


Properties	Description	Type	Occurs
href	Auto reference	URI	1
name	Domain name	String	1
dbType	Database type either "AAD" for Measurement Service database or "ADG" for Dashboard Service database	String	1
version	Package version of "ADG_FULL_CENTRAL"; which is considered as CAST AIP version number	String	1
schema	Name of the database schema	String	1
dbmsVersion	Product name and version of the Database Management System host	String	1
componentsIndexStatus	Status of the Lucene components index	String	1
violationsIndexStatus	Status of the Lucene violations index	String	1
systems.href	For a Central database, reference to get an array of systems	URI	1
applications.href	Reference to get an array of applications	URI	1
configurations.href	Reference to the history of configurations	URI	1
results.href	Reference to get results of all applications	URI	1
commonCategories.href	For a Measurement Database, reference to get all defined categories	URI	1
tags.href	For a Measurement Database, reference to get all application assignments	URI	1

JSON Example

GET DEMO

```
{
  "href": "ENDTOEND833",
  "name": "ENDTOEND833",
  "dbType": "ADG",
  "version": "8.3.3",
  "schema": "endtoend_833_central",
  "dbmsVersion": "PostgreSQL 9.2.3, compiled by Visual C++ build 1600, 64-bit",
  "componentsIndexStatus": "upToDate",
  "violationsIndexStatus": "toUpdate",
  "systems": {
    "href": "ENDTOEND833/systems",
    "name": "All Systems. A system represents a portfolio of applications."
  },
  "applications": {
    "href": "ENDTOEND833/applications",
    "name": "All Applications. An application represents ..."
  },
  "configurations": {
    "href": "ENDTOEND833/configuration/snapshots",
    "name": "All configuration snapshots ..."
  },
  "results": {
    "href": "ENDTOEND833/results",
    "name": "Results by snapshots, by systems, by ..."
  },
  "commonCategories": null,
  "tags": null
}
```

System

 Central Database only

JSON Representation

Properties	Description	Type	Occurs
href	Auto reference	URI	1
name	System name	String	1
technologies	Array of technologies as an union of technologies used by all applications of this system	Array	1
technologies[]	A technology	String	1..*
applications.href	Reference to get an array of applications	URI	1
results.href	Reference to get an array of result items	URI	1

JSON Example

GET DEMO

```
{
  "href": "DEMO/systems/2",
  "name": "BT",
  "technologies": [ "FLEX", "JEE", "Oracle Server", "PL/SQL" ],
  "applications": {
    "href": "DEMO/systems/2/applications",
    "name": "Applications of BT"
  },
  "results": {
    "href": "DEMO/systems/2/results",
    "name": "results breakdown by applications, by snapshots, by technologies."
  }
}
```

Application

URI Templates

HTTP Action	Media Type	URI Templates	Description
GET	application/json	{Domain}/applications	Array of applications of a domain
GET	application/json	{Domain}/applications/{ApplicationID}	An application content

JSON Representation

Properties	Description	Type	Occurs
href	Auto reference	URI	1
name	Application name	String	1
technologies	Array of technologies as an union of technologies used by the application	Array	1
technologies[]	A technology	String	1..*
system.href	For a Central database, reference to get the system owner	URI	1
modules.href	For a Central database, reference to get an array of modules	URI	1
snapshots.href	Reference to get an array of application snapshots	URI	1
results.href	Reference to get an array of results	URI	1
origin.href	For a Measurement Database, reference to the origin application stored in Central Database. The related domain must be defined	URI	1
attachments.href	Reference to get an array of attachments	URI	1
adgDatabase	For a Measurement Database, name of the Central database hosting this application	String	0..1
adgWebSite	For a Measurement Database, full http address to AED web site hosting information detail about this application.	String	0..1
adgLocalId	For a Measurement Database, local ID for this application defined on the database of adgWebSite	String	0..1
adgVersion	For a Measurement Database, AED web site version.	String	0..1

JSON Example

GET DEMO/applications/6

```
{
  "href": "DEMO/applications/6",
  "name": "Application 006",
  "technologies": [ "Cobol", "DB2 Server", "JCL" ],
  "systems": null,
  "modules": null,
  "snapshots": {
    "href": "DEMO/applications/6/snapshots",
    "name": "Snapshots of Application 006"
  },
  "results": null,
  "adgDatabase": "demo_710_central",
  "adgWebSite": "http://10.75.225.94:8080/GM_DRAS/",
  "adgLocalId": "3",
  "adgVersion": "7.1.0"
}
```

Module

JSON Representation

Properties	Description	Type	Occurs
href	Auto reference	URI	1
name	Module name	String	1
technologies	Array of technologies used by this module	Array	1
technologies[]	A technology	String	1..*
applications.href	Reference to get the application owner Warning: this attribute is misspelled applications (with an 's')	URI	1
snapshots.href	Reference to get an array of application snapshots	URI	1
results.href	Reference to get an array of results	URI	1

JSON Example

GET DEMO/applications/6

```
{
  "href": "DEMO/modules/5",
  "name": "Java",
  "applications": {
    "href": "DEMO/modules/5/application",
    "name": "DEMO"
  },
  "technologies": [ "JEE" ],
  "snapshots": {
    "href": "DEMO/modules/5/snapshots",
    "name": "Snapshots of Java"
  },
  "results": {
    "href": "DEMO/modules/5/results",
    "name": "results breakdown by snapshots, by technologies."
  }
}
```

Application Snapshot

URI Templates

HTTP Action	Media Type	URI Templates	Description
GET	application/json	{Domain}/applications/{ApplicationID}/snapshots	Array of snapshots of an application
GET	application/json	{Domain}/applications/{ApplicationID}/snapshots/{SnapshotID}	An application snapshot content

JSON Representation

Properties	Description	Type	Occurs
href	Auto reference	URI	1
name	Application name	String	1
number	Snapshot order number.Snapshots are ordered according to the annotation.date	Integer	1
technologies	Array of technologies used by this application snapshot	Array	1
technologies[]	A technology	String	1..*
annotation	User annotations/information describing this snapshot	Structure	1
annotation.version	Assessment point number	String	1
annotation.date	Application date	Date	1
annotation.description	Snapshot description	String	1
annotation.name	Snapshot name	String	1
annotation.enhancementMeasure	Computation mode of enhancement data. It has one of the following values : "EFP" or "AEP"	String	1
configurationSnapshot.href	Reference to the snapshot configuration	URI	1
system.href	For a Central database, reference to the the system owner	URI	1
application.href	Reference to get the application owner	URI	1
modulesSnapshots.href	For an ADG database, reference to get an array of module snapshots	URI	1
results.href	Reference to get an array of results	URI	1
actionPlan	For a Central database.	Structure	1
actionPlan.issues.href	Array of issues for this application snapshot	URI	1
actionPlan.summary.href	Summary of all issues	URI	1
activeExclusions	For a central database	Structure	1
activeExclusions.exclusions.href	Array of excluded violations for this application snapshot	URI	1
activeExclusions.summary.href	Summary of excluded violations	URI	1
scheduledExclusions	For a central database	Structure	1
scheduledExclusions.exclusions.href	Array of scheduled exclusions in this application snapshot (exclusions will be effective in the next snapshot)	URI	1
scheduledExclusions.summary.href	Summary of scheduled exclusions	URI	1
components.href	For a Central database, reference to this application snapshot's components having a PRI	URI	1
transactions.href	For a Central database, reference to the transactions of this application snapshot	URI	1
violations.href	For a Central database, reference to the violations of this application snapshot	URI	1

treeNode.href	For a Central Database, reference to this application tree-node to get nested components. null if current snapshot is not the last snapshot	URI	1
origin.href	For a Measurement Database, reference to the origin application snapshot stored in Central Database. The related domain must be defined	URI	1
adgLocalId	For a Measurement Database, local ID for this snapshot defined on the original central database	String	0..1

JSON Example

GET DEMO/applications/3/snapshots/8

```
{
  "href": "DEMO/applications/3/snapshots/8",
  "name": "DEMO",
  "number": 2,
  "technologies": [
    "FLEX",
    "JEE",
    "Oracle Server",
    "PL/SQL"
  ],
  "annotation": {
    "version": "V2.0",
    "date": {
      "time": 1336514400000
    },
    "description": "",
    "name": "Computed on 201205090914",
    "enhancementMeasure": "EFP"
  },
  "configurationSnapshot": {
    "href": "DEMO/configuration/snapshots/8",
    "name": "Configuration Snapshot #2"
  },
  "systems": {
    "href": "DEMO/applications/3/systems",
    "name": "Systems of DEMO"
  },
  "application": {
    "href": "DEMO/applications/3",
    "name": "DEMO"
  },
  "moduleSnapshots": {
    "href": "DEMO/applications/3/snapshots/8/modules",
    "name": "Module Snapshots for DEMO #2"
  },
  "results": {
    "href": "DEMO/applications/3/snapshots/8/results",
    "name": "Results breakdown by modules, by technologies"
  },
  "actionPlan": {
    "issues": {
      "href": "DEMO/applications/3/snapshots/8/action-plan/issues",
      "name": "Action Plan Issues"
    },
    "summary": {
      "href": "DEMO/applications/3/snapshots/8/action-plan/summary",
      "name": "Action plan summary for application DEMO in snapshot 2"
    }
  },
  "activeExclusions": {
    "exclusions": {
      "href": "DEMO/applications/3/snapshots/8/excluded-violations",
      "name": "Active exclusions for application DEMO in snapshot 2"
    },
    "summary": {
      "href": "DEMO/applications/3/snapshots/8/excluded-violations-summary",
      "name": "Active exclusions summary for application DEMO in snapshot 2"
    }
  }
}
```

```

    },
    "scheduledExclusions": {
      "exclusions": {
        "href": "DEMO/applications/3/snapshots/8/exclusions/scheduled",
        "name": "Scheduled exclusions for application DEMO in snapshot 2"
      },
      "summary": {
        "href": "DEMO/applications/3/snapshots/8/exclusions/scheduled-summary",
        "name": "Scheduled exclusions summary for application DEMO in snapshot 2"
      }
    },
    "components": {
      "href": "DEMO/applications/3/snapshots/8/components",
      "name": "Components for application DEMO in snapshot 2"
    },
    "transactions": {
      "href": "DEMO/applications/3/snapshots/8/transactions",
      "name": "Transactions for application DEMO in snapshot 2"
    },
    "violations": {
      "href": "DEMO/applications/3/snapshots/8/violations",
      "name": "Violations for application DEMO in snapshot 2"
    }
  }
}

```

Module Snapshot

URI Templates

HTTP Action	Media Type	URI Templates	Description
GET	application/json	{Domain}/modules/{ModuleID}/snapshots	Array of snapshots of a module
GET	application/json	{Domain}/modules/{ModuleID}/snapshots/{SnapshotID}	A module snapshot content
GET	application/json	{Domain}/applications/{ApplicationID}/snapshots/{SnapshotID}/modules	Array of snapshots for modules

JSON Representation

Properties	Description	Type	Occurs
href	Auto reference	URI	1
name	Module name	String	1
number	Snapshot order number.Snapshots are ordered according to the annotation.date	Integer	1
technologies	Array of technologies by this module	Array	1
technologies[]	A technology	String	1..*
annotation	User annotations describing this snapshot	Structure	1
annotation.version	Assessment point number	String	1
annotation.date	Application date	Date	1
annotation.description	Snapshot description	String	1
annotation.name	Snapshot name	String	1
annotation.enhancementMeasure	Computation mode of enhancement data. It has one of the following values : "EFP" or "AEP"	String	1
configurationSnapshot.href	Reference to the snapshot configuration	URI	1
module.href	Reference to get the module owner	URI	1

applicationSnapshot.href	Reference to get the application snapshot owner	URI	1
results.href	Reference to get an array of results	URI	1
actionPlan	For a Central database.	Structure	1
actionPlan.issues.href	Array of issues for this module snapshot	URI	1
actionPlan.summary.href	Summary of all issues	URI	1
components.href	For a Central database, reference to this module snapshot's components having a PRI	URI	1
diagnosisResults.violations.href	For a Central database, reference to the violations of this application snapshot	URI	1
treeNode.href	For a Central Database, reference to this module tree-node to get nested components. null if current snapshot is not the last snapshot	URI	1

JSON Example

GET DEMO/modules/4/snapshots/8

```
{
  "href": "DEMO/modules/4/snapshots/8",
  "name": "Flex",
  "number": 2,
  "technologies": [
    "FLEX"
  ],
  "annotation": {
    "version": "V2.0",
    "date": {
      "time": 1336514400000
    },
    "description": "",
    "name": "Computed on 201205090914",
    "enhancementMeasure": "EFP"
  },
  "configurationSnapshot": {
    "href": "DEMO/configuration/snapshots/8",
    "name": "Configuration Snapshot #2"
  },
  "application": {
    "href": "DEMO/modules/4/application",
    "name": "Applications for Flex"
  },
  "module": {
    "href": "DEMO/modules/4",
    "name": "Flex"
  },
  "applicationSnapshot": {
    "href": "DEMO/applications/3/snapshots/8",
    "name": "DEMO"
  },
  "results": {
    "href": "DEMO/modules/4/snapshots/8/results",
    "name": "Results breakdown by technologies"
  },
  "actionPlan": {
    "issues": null,
    "summary": {
      "href": "DEMO/modules/4/snapshots/8/action-plan/summary",
      "name": "Action plan summary for module Flex in snapshot 2"
    }
  },
  "components": {
    "href": "DEMO/modules/4/snapshots/8/components",
    "name": "Components for module Flex in snapshot 2"
  },
  "diagnosisResults": {
    "violations": {
      "href": "DEMO/applications/3/snapshots/8/violations",
      "name": "Violations for application DEMO in snapshot 2" }
  }
}
```

Attachments

Description

A free JSON content can be attached to an application. Each JSON content is referred with a key.

Warning: keys starting with "CAST:" are reserved for CAST AIP Product.

URI Templates

HTTP Action	Media Type	URI Templates	Description
GET	application/json	{Domain}/applications/{ApplicationID}/attachments	Get an array of all references to JSON contents
GET	application/json	{Domain}/applications/{ApplicationID}/attachments/{Key}	Get a JSON content attached to an application for a given key
GET	application/json	{Domain}/applications/{ApplicationID}/snapshots/{snapshotId}/attachments	Get an array of all references to JSON contents
GET	application/json	{Domain}/applications/{ApplicationID}/snapshots/{snapshotId}/attachments/{Key}	Get a JSON content attached to an application snapshot for a given key
PUT	application/json	{Domain}/applications/{ApplicationID}/attachments/{Key}	Map a JSON Content to an application and a key
PUT	application/json	{Domain}/applications/{ApplicationID}/snapshots/{snapshotId}/attachments/{Key}	Map a JSON Content to an application snapshot and a key
DELETE	application/json	{Domain}/applications/{ApplicationID}/attachments/{Key}	Delete a JSON Content for an application and a key
DELETE	application/json	{Domain}/applications/{ApplicationID}/snapshots/{snapshotId}/attachments/{Key}	Delete a JSON Content for an application snapshot and a key

Application to Tags Assignments



Measurement Database only

Description

A tag is used to filter a set of applications when results are requested. It is up to the REST client to filter applications according to tags using the service listing all applications.

The purpose of the REST API is to minimize request & response flows between client and server relying on client cache management (which is based on "304 NOT MODIFIED" response status). Therefore the client navigator should emit the same requests to the server. If ever the server has been restarted then the client cache would be refreshed.

Therefore, the client should rely on a subset of requests. For instance, to get all applications TQI on a subset of applications, requests TQI for all applications, then filter the results.

Notions

- **Tag:** A tag is a keyword.
- **Category:** A tag belongs to a category. A category is a set of tags.
- **Application to Tags assignment:** A tag can be assigned to an application, but cannot be assigned to a specific application snapshot.

Rules

1. Common categories, tags, and assignments are created for all users.
2. Technologies are similar to tags but are not tags. It is up to the webapp to display these data as tags.
3. When an application is not assigned to any tag of a category, then the webapp considers this application attached to the "other" tag for this category. It is up to the webapp to provide this feature.
4. Tags labels cannot be translated
5. Tags and categories label can be changed.

URI Templates

HTTP Action	Media Type	URI Templates	Description
GET	application/json	{Domain}/tags	Get an array of all application to tag assignments
PUT	application/json	{Domain}/tags	Replace application to tag assignments

JSON Representation

Response (GET)

Properties	Description	Type	Occurs
application.href	Application Reference	URI	1
technologies	Technologies	Array	1
technologies[]	A technology	String	1..*
commonTags	Array of Label	Array	1
commonTags[].key	Tag key	String	1
commonTags[].label	Tag label	String	1
ownTags	Reserved	Array	0..1

Payload (PUT)

Properties	Description	Type	Occurs
application.href	Application Reference	URI	1
commonTags	Array of tags	Array	1
commonTags[]	Tag	Structure	0..*
commonTags[].key	A tag key	String	1

Category



Measurement Database only

Description

A regular category is a container of tags.

A parent category is a container of other categories in order to organize categories as a tree structure.

Web Services may raise errors if following constraints are not verified:

- A category must define items (at least one tag or one category)
- A category has a unique name
- A category cannot define both items and categories
- For a given category a tag has a unique name
- Parent categories MUST NOT define circular relationship
- A category cannot be empty

Example of Categories and Tags:

URI Templates

HTTP Action	Media Type	URI Templates	Description
GET	application/json	{Domain}/common-categories	Get an array of all common categories definitions.
	text/csv		
	application/vnd.openxmlformats-officedocument.spreadsheetml.sheet		
PUT	application/json	{Domain}/common-categories	Update a collection of common categories. Warning: If some tags are missing, then they will be deleted in database.
	text/csv		<p>Bulk updates of ALL common categories.</p> <p>This call creates new categories and tags, updates categories and tags labels, removes categories and tags.</p> <p>Each CSV row is a definition of a couple category/tag, or parent-category/category.</p> <p>This call accepts the following changes:</p> <ul style="list-style-type: none"> ▪ you can change labels of categories and tags ▪ you can add new tags or remove tags of existing categories ▪ you can remove existing categories ▪ you can add new categories with a list of tags ▪ you can add new parent categories referring existing categories or new categories <p>Warning: All existing categories must be put in this payload (see result of GET) ,otherwise they will be deleted</p> <p>Warning: A category must define at least one tag or one sub-category</p> <p>Warning: A tag or a category without key is considered as new item to create</p>

POST	application/json	{Domain}/common-categories	<p>Create a collection of common categories. Request content example:</p> <pre>[{ "label": "MyTags", "tags": [{ "label": "Favorites"}, { "label": "Major"}, { "label": "Minor"}] }]</pre> <p>Response content example:</p> <pre>[{ "key": "5", "label": "MyTags", "tags": [{ "key": "10", "label": "Favorites"}, { "key": "11", "label": "Major"}, { "key": "12", "label": "Minor"}] }]</pre>
DELETE	application/json	{Domain}/common-categories	<p>Delete a collection of common categories (tags to Applications assignments are deleted) Request content example:</p> <pre>[{ "key": "1" }, { "key": "2" }, { "key": "3" }]</pre>

JSON Representations

Properties	Response Structure	Payload POST Structure	Payload DELETE Structure	Payload PUT Structure
key	Unique global ID	N/A	required ID of a category to delete	Required ID of a category to update
label	Category Label	Required label of a category to create	N/A	Optional label: if set this is a label update
Regular Category Only				
tags	Array of tags	Required array of tags to create	N/A	Full array of tags (if some existing tags are not set then they will be removed)
tags[]	A tag	Required tag to create	N/A	A tag
tag[].key	Unique global tag ID	N/A	N/A	Optional tag ID: if not set a tag will be added
tag[].label	Tag label	Required tag label	N/A	Optional label: If set this is a label update, or a tag to create
Parent Category Only				
categories	Array of sub categories	Required array of sub categories	N/A	Full array of sub categories (if some existing sub categories are not set then they will be removed)
categories []	A sub category	Required sub category	N/A	A sub category
categories[].key	Sub category key	Optional sub category key: if not set a label is used	N/A	Required a sub category ID
categories[].label	Sub category label	Optional sub category label: if set this is a category created in this payload	N/A	N/A

JSON Example

```
[
  { "key": "26", "label": "Departments", "tags": [{ "key": "181", "label": "Dept1" }, { "key": "165",
"label": "Dept2" } ] },
  { "key": "4", "label": "Countries", "tags": [{ "key": "3", "label": "France" }, { "key": "93", "label":
"Germany" }, { "key": "4", "label": "Italy" } ] },
  { "key": "100", "label": "Location", "categories": [{ "key": "26", "label": "Departments" }, { "key":
"4", "label": "Countries" } ] }
]
```

CSV Representation

Columns Titles	Type	Response	Put Payload
Category Label	String	Category label	A label for a category to create or to update
Category Key	String	Category key (empty for a creation)	A key for a an existing
Item Type	String	Item types: either "TAG" for a Regular Category or "CATEGORY" for a Parent Category 'TAG' defines a tag 'CATEGORY' defines a sub caegory	
Item Label	String	Tag or Sub Category label	If Item Type is 'TAG', a label for a tag to create to update If Item Type is 'CATEGORY', a sub category referred with a label for a category created in this payload
Item Key	String	Tag or Sub Category key (empty for a an item created with this payload)	If Item Type is 'TAG', a key for an existing tag If Item Type is 'CATEGORY', a key for an existing category

CSV Example

Categories and Tags creation:

```
Category Label;Category Key;Item Type;Item Label;Item Key
Team Size;;TAG;Small Size;
Team Size;;TAG;Large Size;
Region;;CATEGORY;West;
Region;;CATEGORY;East;
West;;CATEGORY;Europe;
West;;CATEGORY;U.S.;
East;;TAG;China;
East;;TAG;India;
Europe;;TAG;France;
Europe;;TAG;U.K.;
U.S.;;TAG;Texas;
U.S.;;TAG;New York;
```

Rename 'UK' as 'United Kingdom' , add 'Italy as new tag for 'Europe', create a new category 'Toplevel' as parent of 'Team Size' and 'Region'

```
Category Label;Category Key;Item Type;Item Label;Item Key
Team Size;1;TAG;Small Size;1
Team Size;1;TAG;Large Size;2
Region;2;CATEGORY;West;3
Region;2;CATEGORY;East;4
West;3;CATEGORY;Europe;5
West;3;CATEGORY;U.S.;6
East;4;TAG;China;5
East;4;TAG;India;6
Europe;5;TAG;France;7
Europe;5;TAG;United Kingdom;8
Europe;5;TAG;Italy;
U.S.;6;TAG;Texas;9
U.S.;6;TAG;New York;10
Toplevel;;CATEGORY;Team Size;1
Toplevel;;CATEGORY;Region;2
```