

TM Forum Specification

Test Execution API Conformance Profile

TMF708B

Team Approved Date: 27-Jan-2021

Release Status: Pre-production	Approval Status: Team Approved
Version 4.0.0	IPR Mode: RAND

Notice

Copyright © TM Forum 2021. All Rights Reserved.

This document and translations of it may be copied and furnished to others, and derivative works that comment on or otherwise explain it or assist in its implementation may be prepared, copied, published, and distributed, in whole or in part, without restriction of any kind, provided that the above copyright notice and this section are included on all such copies and derivative works. However, this document itself may not be modified in any way, including by removing the copyright notice or references to TM FORUM, except as needed for the purpose of developing any document or deliverable produced by a TM FORUM Collaboration Project Team (in which case the rules applicable to copyrights, as set forth in the [TM FORUM IPR Policy](#), must be followed) or as required to translate it into languages other than English.

The limited permissions granted above are perpetual and will not be revoked by TM FORUM or its successors or assigns.

This document and the information contained herein is provided on an "AS IS" basis and TM FORUM DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY OWNERSHIP RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Direct inquiries to the TM Forum office:

181 New Road, Suite 304
Parsippany, NJ 07054, USA
Tel No. +1 973 944 5100
Fax No. +1 973 944 5110
TM Forum Web Page: www.tmforum.org

TABLE OF CONTENTS

Notice	2
TABLE OF CONTENTS	3
INTRODUCTION - API DESCRIPTION	5
RESOURCE MODEL CONFORMANCE	6
API MANDATORY RESOURCES	6
General Notes on Resource Attribute Conformance	6
TestSuiteExecution Resource Mandatory Attributes	7
TestEnvironmentAllocationExecution Resource Mandatory Attributes	9
NonFunctionalTestExecution Resource Mandatory Attributes.....	10
TestCaseExecution Resource Mandatory Attributes.....	12
TestEnvironmentProvisioningExecution Resource Mandatory Attributes.....	14
API OPERATIONS CONFORMANCE	16
TestSuiteExecution Mandatory Operations	16
TestEnvironmentAllocationExecution Mandatory Operations	16
NonFunctionalTestExecution Mandatory Operations.....	16
TestCaseExecution Mandatory Operations.....	17
TestEnvironmentProvisioningExecution Mandatory Operations.....	17
API GET OPERATION CONFORMANCE	18
Definitions for Filter.....	18
GET /testSuiteExecution?fields=...&{filtering}.....	18
GET /testSuiteExecution/{id}?fields=...&{filtering}.....	18
GET /testEnvironmentAllocationExecution?fields=...&{filtering}	19
GET /testEnvironmentAllocationExecution/{id}?fields=...&{filtering}	19
GET /nonFunctionalTestExecution?fields=...&{filtering}.....	19
GET /nonFunctionalTestExecution/{id}?fields=...&{filtering}.....	19
GET /testCaseExecution?fields=...&{filtering}	20
GET /testCaseExecution/{id}?fields=...&{filtering}	20
GET /testEnvironmentProvisioningExecution?fields=...&{filtering}	20
GET /testEnvironmentProvisioningExecution/{id}?fields=...&{filtering}.....	20
API POST OPERATION CONFORMANCE	21
POST /testSuiteExecution	21
POST /testEnvironmentAllocationExecution	21
POST /nonFunctionalTestExecution	22
POST /testCaseExecution	22

POST /testEnvironmentProvisioningExecution	23
ACKNOWLEDGEMENTS	24
Release History	24
Version History	24

INTRODUCTION - API DESCRIPTION

This API provides a standardized mechanism for test case, test suite, and non-functional test model execution. This also includes allocation and provisioning of test environments for test execution.

RESOURCE MODEL CONFORMANCE

API MANDATORY RESOURCES

The following table indicates the mandatory resources for this API.

Resource Name	Comment
TestSuiteExecution	Mandatory unless the TestEnvironmentAllocationExecution or the TestEnvironmentProvisioningExecution or the TestCaseExecution or the NonFunctionalTestExecution resource is present
TestEnvironmentAllocationExecution	Mandatory unless the TestEnvironmentProvisioningExecution or the TestCaseExecution or the TestSuiteExecution or the NonFunctionalTestExecution resource is present
NonFunctionalTestExecution	Mandatory unless the TestEnvironmentAllocationExecution or the TestEnvironmentProvisioningExecution or the TestCaseExecution or the TestSuiteExecution resource is present
TestCaseExecution	Mandatory unless the TestEnvironmentAllocationExecution or the TestEnvironmentProvisioningExecution or the TestSuiteExecution or the NonFunctionalTestExecution resource is present
TestEnvironmentProvisioningExecution	Mandatory unless the TestEnvironmentAllocationExecution or the TestCaseExecution or the TestSuiteExecution or the NonFunctionalTestExecution resource is present

General Notes on Resource Attribute Conformance

There are three situations that could occur for an attribute:

- Mandatory attribute,
- Mandatory attribute if the optional parent attribute is present,

- Non-mandatory/Optional attribute. Those are all the other attributes not mentioned in the following subsections. Please refer to the corresponding API REST Specification for more details.
- The tables in the subsections below indicate which attributes are mandatory including mandatory when an optional parent is present.
- Where a resource is an input into an API (e.g. POST, PATCH), Mandatory means that the attribute value must be supplied by the API consumer in the input (and must not be blank or null).
- Where a resource is an output from an API (e.g. GET, POST), Mandatory means that the attribute value must be supplied by the API provider in the output (and must not be blank or null).
- For a sub-resource that is not an array, Mandatory (cardinality 1..1) means that the sub-resource must be present, while Optional (cardinality 0..1) means that the sub-resource may be absent. Mandatory and Optional on the sub-resource attributes apply to the sub-resource if present.
- For a sub-resource that is an array, Mandatory (cardinality 1..*) means that at least one sub-resource must be present in the array, while Optional (cardinality 0..*) means that the array may be absent. Mandatory and Optional on the sub-resource attributes apply to each of the sub-resources if present.

In this table are listed all mandatory attributes. A mandatory attribute MUST be retrieved in resource representation when no attribute selection is used (e.g., GET `./{id}`) without any attribute selection.

When an attribute is listed with an indentation (in second column) it means this attribute is mandatory if root (parent) attribute is present.

TestSuiteExecution Resource Mandatory Attributes

Mandatory attribute when parent is present	Rule
dataCorrelationId	M
href	M (in response messages)
id	M (in response messages)
testSuite	M Mandatory unless testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.testScenario is present
id	M
testEnvironmentProvisioningExecution	M

Mandatory attribute when parent is present		Rule
	dataCorrelationId	M
	href	M (in response messages)
	id	M (in response messages)
	testEnvironmentAllocationExecution	M
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution		M
	dataCorrelationId	M
	href	M (in response messages)
	id	M (in response messages)
	resourceManagerUrl	M
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.abstractEnvironment (if present)		
	id	M
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.concreteResourceMapping.concreteResource (if present)		Array of ConcreteResource
	name	M
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.generalTestArtifact (if present)		Array of GeneralTestArtifactRef
	id	M
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.testScenario (if present)		
	id	M
testEnvironmentProvisioningExecution.generalTestArtifact (if present)		Array of GeneralTestArtifactRef See conditions for GeneralTestArtifactRef at testEnvironmentProvisioningExecution.te

Mandatory attribute when parent is present		Rule
		stEnvironmentAllocationExecution.generalTestArtifact
testEnvironmentProvisioningExecution.provisioningArtifact (if present)		Array of ProvisioningArtifactRef
id		M
generalTestArtifact (if present)		Array of GeneralTestArtifactRef See conditions for GeneralTestArtifactRef at testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.generalTestArtifact
testDataInstance (if present)		Array of TestDataInstanceRef
id		M

TestEnvironmentAllocationExecution Resource Mandatory Attributes

Mandatory attribute when parent is present		Rule
dataCorrelationId		M
href		M (in response messages)
id		M (in response messages)
resourceManagerUrl		M
abstractEnvironment		M Mandatory unless testScenario is present
id		M
concreteResourceMapping.concreteResource (if present)		Array of ConcreteResource
name		M

Mandatory attribute when parent is present		Rule
generalTestArtifact (if present)		Array of GeneralTestArtifactRef
	id	M
testScenario (if present)		
	id	M

NonFunctionalTestExecution Resource Mandatory Attributes

Mandatory attribute when parent is present		Rule
dataCorrelationId		M
href		M (in response messages)
id		M (in response messages)
nonFunctionalTestModel		M Mandatory unless testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.testScenario is present
	id	M
testEnvironmentProvisioningExecution		M
	dataCorrelationId	M
	href	M (in response messages)
	id	M (in response messages)
	testEnvironmentAllocationExecution	M
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution		M
	dataCorrelationId	M
	href	M (in response messages)

Mandatory attribute when parent is present		Rule
	id	M (in response messages)
	resourceManagerUrl	M
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.abstractEnvironment (if present)		
	id	M
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.concreteResourceMapping.concreteResource (if present)		Array of ConcreteResource
	name	M
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.generalTestArtifact (if present)		Array of GeneralTestArtifactRef
	id	M
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.testScenario (if present)		
	id	M
testEnvironmentProvisioningExecution.generalTestArtifact (if present)		Array of GeneralTestArtifactRef See conditions for GeneralTestArtifactRef at testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.generalTestArtifact
testEnvironmentProvisioningExecution.provisioningArtifact (if present)		Array of ProvisioningArtifactRef
	id	M
generalTestArtifact (if present)		Array of GeneralTestArtifactRef See conditions for GeneralTestArtifactRef at testEnvironmentProvisioningExecution.te

Mandatory attribute when parent is present		Rule
		stEnvironmentAllocationExecution.generalTestArtifact
testDataInstance (if present)		Array of TestDataInstanceRef
id		M

TestCaseExecution Resource Mandatory Attributes

Mandatory attribute when parent is present		Rule
dataCorrelationId		M
href		M (in response messages)
id		M (in response messages)
testCase		M Mandatory unless testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.testScenario is present
id		M
testEnvironmentProvisioningExecution		M
dataCorrelationId		M
href		M (in response messages)
id		M (in response messages)
testEnvironmentAllocationExecution		M
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution		M
dataCorrelationId		M
href		M (in response messages)

Mandatory attribute when parent is present		Rule
	id	M (in response messages)
	resourceManagerUrl	M
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.abstractEnvironment (if present)		
	id	M
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.concreteResourceMapping.concreteResource (if present)		Array of ConcreteResource
	name	M
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.generalTestArtifact (if present)		Array of GeneralTestArtifactRef
	id	M
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.testScenario (if present)		
	id	M
testEnvironmentProvisioningExecution.generalTestArtifact (if present)		Array of GeneralTestArtifactRef See conditions for GeneralTestArtifactRef at testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.generalTestArtifact
testEnvironmentProvisioningExecution.provisioningArtifact (if present)		Array of ProvisioningArtifactRef
	id	M
generalTestArtifact (if present)		Array of GeneralTestArtifactRef See conditions for GeneralTestArtifactRef at testEnvironmentProvisioningExecution.te

Mandatory attribute when parent is present		Rule
		stEnvironmentAllocationExecution.generalTestArtifact
testDataInstance (if present)		Array of TestDataInstanceRef
id		M

TestEnvironmentProvisioningExecution Resource Mandatory Attributes

Mandatory attribute when parent is present		Rule
dataCorrelationId		M
href		M (in response messages)
id		M (in response messages)
testEnvironmentAllocationExecution		M
	dataCorrelationId	M
	href	M (in response messages)
	id	M (in response messages)
	resourceManagerUrl	M
testEnvironmentAllocationExecution.abstractEnvironment (if present)		
	id	M
testEnvironmentAllocationExecution.concreteResourceMapping.concreteResource (if present)		Array of ConcreteResource
	name	M
testEnvironmentAllocationExecution.generalTestArtifact (if present)		Array of GeneralTestArtifactRef
	id	M
testEnvironmentAllocationExecution.testScenario (if present)		

Mandatory attribute when parent is present		Rule
	id	M
generalTestArtifact (if present)		Array of GeneralTestArtifactRef See conditions for GeneralTestArtifactRef at testEnvironmentAllocationExecution.g eneralTestArtifact
provisioningArtifact (if present)		Array of ProvisioningArtifactRef
	id	M

API OPERATIONS CONFORMANCE

For every single resource the following tables includes mandatory operations.

TestSuiteExecution Mandatory Operations

The following table indicates which ones are mandatory for the TestSuiteExecution resource:

Uniform API Operation
GET
POST

TestEnvironmentAllocationExecution Mandatory Operations

The following table indicates which ones are mandatory for the TestEnvironmentAllocationExecution resource:

Uniform API Operation
GET
POST

NonFunctionalTestExecution Mandatory Operations

The following table indicates which ones are mandatory for the NonFunctionalTestExecution resource:

Uniform API Operation
GET
POST

TestCaseExecution Mandatory Operations

The following table indicates which ones are mandatory for the TestCaseExecution resource:

Uniform API Operation
GET
POST

TestEnvironmentProvisioningExecution Mandatory Operations

The following table indicates which ones are mandatory for the TestEnvironmentProvisioningExecution resource:

Uniform API Operation
GET
POST

API GET OPERATION CONFORMANCE

All the GET operations in this API share the same status code pattern.

GET	Mandatory/Optional
Response Status Code 200 if successful	M
Response Status Code 404 if not found	M

Definitions for Filter

The following definitions apply to all the GET operations:

- **Filtered Search:** A filtered search can be applied using query parameters to obtain only the resources that meet the criteria defined by the filtering parameters included in the query request. Several elements can be applied to the filtered search. In that case logic, a logical AND is applied to combine the criteria (e.g.:?severity=<value>&status=<value>).
- **Attribute selection (Limiting Response Data):** In order to limit which attributes are included in the response, the GET request can include the ?fields= query parameter. Only those attributes whose names are supplied in this parameter will be returned. Attribute selection capabilities are the same for collections retrieval and individual resource queries.
- **Level:** The filtering and attribute selection can apply to the top level properties (attributes) and subproperties. The tables below show which attributes need to be supported in top-level or contained resources.

GET /testSuiteExecution?fields=...&{filtering}

This operation list or find TestSuiteExecution entities

Attribute selection is mandatory for all first level attributes except for the href attribute.

Filtering on sub-resources is optional for all compliance levels

GET /testSuiteExecution/{id}?fields=...&{filtering}

This operation retrieves a TestSuiteExecution entity. Attribute selection is enabled for all first level attributes.

Attribute selection is mandatory for all first level attributes except for the href attribute.

Filtering on sub-resources is optional for all compliance levels

GET**`/testEnvironmentAllocationExecution?fields=...&{filtering}`**

This operation list or find TestEnvironmentAllocationExecution entities

Attribute selection is mandatory for all first level attributes except for the href attribute.

Filtering on sub-resources is optional for all compliance levels

GET**`/testEnvironmentAllocationExecution/{id}?fields=...&{filtering}`**

This operation retrieves a TestEnvironmentAllocationExecution entity. Attribute selection is enabled for all first level attributes.

Attribute selection is mandatory for all first level attributes except for the href attribute.

Filtering on sub-resources is optional for all compliance levels

GET**`/nonFunctionalTestExecution?fields=...&{filtering}`**

This operation list or find NonFunctionalTestExecution entities

Attribute selection is mandatory for all first level attributes except for the href attribute.

Filtering on sub-resources is optional for all compliance levels

GET**`/nonFunctionalTestExecution/{id}?fields=...&{filtering}`**

This operation retrieves a NonFunctionalTestExecution entity. Attribute selection is enabled for all first level attributes.

Attribute selection is mandatory for all first level attributes except for the href attribute.

Filtering on sub-resources is optional for all compliance levels

GET /testCaseExecution?fields=...&{filtering}

This operation list or find TestCaseExecution entities

Attribute selection is mandatory for all first level attributes except for the href attribute.

Filtering on sub-resources is optional for all compliance levels

GET /testCaseExecution/{id}?fields=...&{filtering}

This operation retrieves a TestCaseExecution entity. Attribute selection is enabled for all first level attributes.

Attribute selection is mandatory for all first level attributes except for the href attribute.

Filtering on sub-resources is optional for all compliance levels

GET

/testEnvironmentProvisioningExecution?fields=...&{filtering}

This operation list or find TestEnvironmentProvisioningExecution entities

Attribute selection is mandatory for all first level attributes except for the href attribute.

Filtering on sub-resources is optional for all compliance levels

GET

/testEnvironmentProvisioningExecution/{id}?fields=...&{filtering}

This operation retrieves a TestEnvironmentProvisioningExecution entity. Attribute selection is enabled for all first level attributes.

Attribute selection is mandatory for all first level attributes except for the href attribute.

Filtering on sub-resources is optional for all compliance levels

API POST OPERATION CONFORMANCE

All the POST operations in this API share the same status code pattern.

POST	Mandatory/Optional
Status Code 201 if resource created	M

POST /testSuiteExecution

This operation creates a TestSuiteExecution entity.

The following table provides the list of mandatory attributes when creating an instance of the TestSuiteExecution resource, including any possible rule, conditions and applicable default values.

Mandatory Attributes	Rule
testEnvironmentProvisioningExecution	
testEnvironmentProvisioningExecution.href	
testEnvironmentProvisioningExecution.id	
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution	
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.href	
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.id	
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.resourceManagerUrl	

POST /testEnvironmentAllocationExecution

This operation creates a TestEnvironmentAllocationExecution entity.

The following table provides the list of mandatory attributes when creating an instance of the TestEnvironmentAllocationExecution resource, including any possible rule, conditions and applicable default values.

Mandatory Attributes	Rule
resourceManagerUrl	

POST /nonFunctionalTestExecution

This operation creates a NonFunctionalTestExecution entity.

The following table provides the list of mandatory attributes when creating an instance of the NonFunctionalTestExecution resource, including any possible rule, conditions and applicable default values.

Mandatory Attributes	Rule
testEnvironmentProvisioningExecution	
testEnvironmentProvisioningExecution.href	
testEnvironmentProvisioningExecution.id	
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution	
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.href	
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.id	
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.resourceManagerUrl	

POST /testCaseExecution

This operation creates a TestCaseExecution entity.

The following table provides the list of mandatory attributes when creating an instance of the TestCaseExecution resource, including any possible rule, conditions and applicable default values.

Mandatory Attributes	Rule
testEnvironmentProvisioningExecution	
testEnvironmentProvisioningExecution.href	

Mandatory Attributes	Rule
testEnvironmentProvisioningExecution.id	
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution	
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.href	
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.id	
testEnvironmentProvisioningExecution.testEnvironmentAllocationExecution.resourceManagerUrl	

POST /testEnvironmentProvisioningExecution

This operation creates a TestEnvironmentProvisioningExecution entity.

The following table provides the list of mandatory attributes when creating an instance of the TestEnvironmentProvisioningExecution resource, including any possible rule, conditions and applicable default values.

Mandatory Attributes	Rule
testEnvironmentAllocationExecution	
testEnvironmentAllocationExecution.href	
testEnvironmentAllocationExecution.id	
testEnvironmentAllocationExecution.resourceManagerUrl	

ACKNOWLEDGEMENTS

Release History

Release Status	Date	Release led by:	Description
Pre-production	29-Jan-2021	Pierre Gauthier, TM Forum pgauthier@tmforum.org Edward Pershwitz, ITEA Technologies edward.pershwitz@iteatechnologies.com	First Release of the Document.

Version History

Version Number	Date	Modified by	Description
4.0.0	29-Jan-2021	Alan Pope, TM Forum	Final edits prior to publication