

ETSI GR CIM 008 V1.3.1 (2025-08)



GROUP REPORT

Context Information Management (CIM); NGSI-LD Primer

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Reference

RGR/CIM-008NGSI-LD-PriV131

Keywords

API, interoperability, IoT, smart city

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Foreword

This Group Report (GR) has been produced by ETSI Industry Specification Group (ISG) cross-cutting Context Information Management (CIM).

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Modal verbs terminology

In the present document "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Executive summary

The present document (this "Primer") is intended to give developers an introduction on how the NGSI-LD API is used. The aim is to give developers, especially to those building applications and services on top of the NGSI-LD API, an easy start by explaining the NGSI-LD API based on typical examples. For illustration purposes a scenario is introduced, for which the information is modelled according to the NGSI-LD information model. Examples for providing information, i.e. creating, updating and deleting information, and for requesting information, i.e. synchronous queries as well as asynchronous subscribe/notify interactions, are given. The focus is on typical usage rather than on completeness of all features.

Introduction

While ETSI GS CIM 009 [i.1] provides the complete specification of the NGSI-LD API, the present document, called "Primer", is intended to give users an introduction to the use of the NGSI-LD API. The idea is to take a simple scenario, i.e. a store that sells products to customers, for illustration purposes and show typical NGSI-LD API operation examples. The examples for information provision show how Entities, Properties and Relationships can be created, updated, appended, replaced and deleted. The examples for information consumption show how Entities can be synchronously queried, filtered according to Property values or filtered according to geographical location using geographic queries. Finally change-based and time-based subscriptions are introduced and how these create asynchronous subscriptions depending on a change-based or time-based trigger.

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1 Scope

The present document provides an introduction, in particular for developers, on how the NGSI-LD API, defined in ETSI GS CIM 009 [i.1], is used. The focus is on typical use and is based on a small NGSI-LD data model example, where the data model conforms to the NGSI-LD information model. More information about the NGSI-LD information model can be found in ETSI GR CIM 002 [i.2].

2 References

2.1 Normative references

Normative references are not applicable in the present document.

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long-term validity.

The following referenced documents may be useful in implementing an ETSI deliverable or add to the reader's understanding, but are not required for conformance to the present document.

[i.1] ETSI GS CIM 009: "Context Information Management (CIM); NGSI-LD API".

[i.2] ETSI GR CIM 002: "Context Information Management (CIM); Use Cases (UC)".

[i.3] [IETF RFC 3986](#): "Uniform Resource Identifier (URI): Generic Syntax".

[i.4] IEEE POSIX 1003.2™-1992: "IEEE Standard for Information Technology - Portable Operating System Interfaces (POSIX®) - Part 2: Shell and Utilities".

[i.5] [IETF RFC 7946](#): "The GeoJSON Format".

[i.6] ISG CIM Forge: "[Postman Scripts for NGSI-LD Primer](#)".

[i.7] [IETF RFC 5646](#): "Tags for Identifying Languages".

3 Definition of terms, symbols and abbreviations

3.1 Terms

For the purposes of the present document, the terms given in ETSI GS CIM 009 [i.1] and the following apply:

NOTE 1: The letters "NGSI-LD" were added to most terms to confirm that they are distinct from other terms of similar/same name in use in other organizations, however, in the present document the letters "NGSI-LD" are generally omitted for brevity.

NOTE 2: The terms defined in this clause are capitalized throughout the present document.

NGSI-LD Attribute: reference to both an NGSI-LD Property and to an NGSI-LD Relationship

NGSI-LD Attribute Instance (in case of temporal representation of NGSI-LD Entities): reference to an NGSI-LD Attribute, at a specific moment in time of its temporal evolution, usually identified by its instanceId