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**Information technology — Open data  
protocol (OData) v4.0**

**Part 1:  
Core**

*Technologies de l'information — Protocole de données ouvertes  
(OData) v4.0 —*

*Partie 2: Base*



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### Additional artifacts:

This prose specification is one component of a Work Product that also includes:

- List of Errata items. *OData Version 4.0 Errata 02*. Edited by Michael Pizzo, Ralf Handl, Martin Zurmuehl, and Hubert Heijkers. 30 October 2014. OASIS Approved Errata. <http://docs.oasis-open.org/odata/odata/v4.0/errata02/os/odata-v4.0-errata02-os.html>.
- *OData Version 4.0 Part 1: Protocol Plus Errata 02* (this document). Edited by Michael Pizzo, Ralf Handl, and Martin Zurmuehl. 30 October 2014. OASIS Standard incorporating Approved Errata 02. <http://docs.oasis-open.org/odata/odata/v4.0/errata02/os/complete/part1-protocol/odata-v4.0-errata02-os-part1-protocol-complete.html>.
- *OData Version 4.0 Part 2: URL Conventions Plus Errata 02*. Edited by Michael Pizzo, Ralf Handl, and Martin Zurmuehl. 30 October 2014. OASIS Standard incorporating Approved

- Errata 02. <http://docs.oasis-open.org/odata/odata/v4.0/errata02/os/complete/part2-url-conventions/odata-v4.0-errata02-os-part2-url-conventions-complete.html>.
- *OData Version 4.0 Part 3: Common Schema Definition Language (CSDL) Plus Errata 02*. Edited by Michael Pizzo, Ralf Handl, and Martin Zurmuehl. 30 October 2014. OASIS Standard incorporating Approved Errata 02. <http://docs.oasis-open.org/odata/odata/v4.0/errata02/os/complete/part3-csdl/odata-v4.0-errata02-os-part3-csdl-complete.html>.
  - ABNF components: OData ABNF Construction Rules Version 4.0 and OData ABNF Test Cases. <http://docs.oasis-open.org/odata/odata/v4.0/errata02/os/complete/abnf/>.
  - Vocabulary components: OData Core Vocabulary, OData Measures Vocabulary and OData Capabilities Vocabulary. <http://docs.oasis-open.org/odata/odata/v4.0/errata02/os/complete/vocabularies/>.
  - XML schemas: OData EDM XML Schema and OData EDM XML Schema. <http://docs.oasis-open.org/odata/odata/v4.0/errata02/os/complete/schemas/>.
  - OData Metadata Service Entity Model: <http://docs.oasis-open.org/odata/odata/v4.0/errata02/os/complete/models/>.
  - Change-marked (redlined) versions of OData Version 4.0 Part 1, Part 2, and Part 3. OASIS Standard incorporating Approved Errata 02. <http://docs.oasis-open.org/odata/odata/v4.0/errata02/os/redlined/>.

#### Related work:

This specification is related to:

- *OData Version 4.0 Part 1: Protocol*. Edited by Michael Pizzo, Ralf Handl, and Martin Zurmuehl. 24 February 2014. OASIS Standard. <http://docs.oasis-open.org/odata/odata/v4.0/os/part1-protocol/odata-v4.0-os-part1-protocol.html>.
- *OData Atom Format Version 4.0*. Edited by Martin Zurmuehl, Michael Pizzo, and Ralf Handl. Latest version. <http://docs.oasis-open.org/odata/odata-atom-format/v4.0/odata-atom-format-v4.0.html>.
- *OData JSON Format Version 4.0*. Edited by Ralf Handl, Michael Pizzo, and Mark Biamonte. Latest version. <http://docs.oasis-open.org/odata/odata-json-format/v4.0/odata-json-format-v4.0.html>.

#### Declared XML namespaces:

- <http://docs.oasis-open.org/odata/ns/edm>
- <http://docs.oasis-open.org/odata/ns/edm>

#### Abstract:

The Open Data Protocol (OData) enables the creation of REST-based data services, which allow resources, identified using Uniform Resource Locators (URLs) and defined in an Entity Data Model (EDM), to be published and edited by Web clients using simple HTTP messages. This document defines the core semantics and facilities of the protocol.

#### Status:

This document was last revised or approved by the OASIS Open Data Protocol (OData) TC on the above date. The level of approval is also listed above. Check the “Latest version” location noted above for possible later revisions of this document. Any other numbered Versions and other technical work produced by the Technical Committee (TC) are listed at [https://www.oasis-open.org/committees/tc\\_home.php?wg\\_abbrev=odata#technical](https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=odata#technical).

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When referencing this specification the following citation format should be used:

**[OData-Part1]**

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<http://docs.oasis-open.org/odata/odata/v4.0/errata02/os/complete/part1-protocol/odata-v4.0-errata02-os-part1-protocol-complete.html>. Latest version: <http://docs.oasis-open.org/odata/odata/v4.0/odata-v4.0-part1-protocol.html>.

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# 1 Introduction

The Open Data Protocol (OData) enables the creation of REST-based data services, which allow resources, identified using Uniform Resource Locators (URLs) and defined in a data model, to be published and edited by Web clients using simple HTTP messages. This specification defines the core semantics and the behavioral aspects of the protocol.

The [\[OData-URL\]](#) specification defines a set of rules for constructing URLs to identify the data and metadata exposed by an OData service as well as a set of reserved URL query options.

The [\[OData-CSDL\]](#) specification defines an XML representation of the entity data model exposed by an OData service.

The [\[OData-Atom\]](#) and [\[OData-JSON\]](#) documents specify the format of the resource representations that are exchanged using OData.

## 1.1 Terminology

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [\[RFC2119\]](#).

## 1.2 Normative References

- [OData-ABNF]** *OData ABNF Construction Rules Version 4.0.*  
See link in "Additional artifacts" section on cover page.
- [OData-Atom]** *OData ATOM Format Version 4.0.*  
See link in "Related work" section on cover page.
- [OData-CSDL]** *OData Version 4.0 Part 3: Common Schema Definition Language (CSDL).*  
See link in "Additional artifacts" section on cover page.
- [OData-JSON]** *OData JSON Format Version 4.0.*  
See link in "Related work" section on cover page.
- [OData-URL]** *OData Version 4.0 Part 2: URL Conventions.*  
See link in "Additional artifacts" section on cover page.
- [OData-VocCap]** *OData Capabilities Vocabulary.*  
See link in "Additional artifacts" section on cover page.
- [OData-VocCore]** *OData Core Vocabulary.*  
See link in "Additional artifacts" section on cover page.
- [RFC2046]** Freed, N. and N. Borenstein, "Multipurpose Internet Mail Extensions (MIME) Part Two: Media Types", RFC 2046, November, 1996. <http://www.ietf.org/rfc/rfc2046.txt>.
- [RFC2119]** Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997. <http://www.ietf.org/rfc/rfc2119.txt>.
- [RFC2617]** Franks, J., Hallam-Baker, P., Hostetler, J., Lawrence, S., Leach, P., Luotonen, A., and L. Stewart, "HTTP Authentication: Basic and Digest Access Authentication", RFC 2617, June 1999. <http://www.ietf.org/rfc/rfc2617.txt>.
- [RFC3987]** Duerst, M. and, M. Suignard, "Internationalized Resource Identifiers (IRIs)", RFC 3987, January 2005. <http://www.ietf.org/rfc/rfc3987.txt>.
- [RFC5023]** Gregorio, J., Ed., and B. de hOra, Ed., "The Atom Publishing Protocol.", RFC 5023, October 2007. <http://tools.ietf.org/html/rfc5023>.
- [RFC5789]** Dusseault, L., and J. Snell, "Patch Method for HTTP", RFC 5789, March 2010. <http://tools.ietf.org/html/rfc5789>.

- [RFC7230]** Fielding, R., Ed. and J. Reschke, Ed., "Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing", RFC 7230, June 2014. <http://www.ietf.org/rfc/rfc7230.txt>.
- [RFC7231]** Fielding, R., Ed. and J. Reschke, Ed., "Hypertext Transfer Protocol (HTTP/1.1): Semantics and Content", RFC 7231, June 2014. <http://www.ietf.org/rfc/rfc7231.txt>.
- [RFC7232]** Fielding, R., Ed. and J. Reschke, Ed., "Hypertext Transfer Protocol (HTTP/1.1): Conditional Requests", RFC 7232, June 2014. <http://www.ietf.org/rfc/rfc7232.txt>.
- [RFC7240]** Snell, J., "Prefer Header for HTTP", RFC 7240, June 2014. <http://www.ietf.org/rfc/rfc7240.txt>.