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# OData

# Agenda

- Wprowadzenie
- Ekosystem
- Szybki przegląd
- Podstawy języka zapytań
- Początki
- OData w ASP.NET
- Narzędzia i biblioteki

# Wprowadzenie

- Otwarty protokół oparty o REST
- Standard OASIS
- Umożliwia łatwą wymianę danych w integracji aplikacji lub w ramach aplikacji
- Główne składowe
  - OData query syntax: składnia URL dla zapytań
  - OData Formatting: do wyboru ATOM Publishing Protocol (XML) lub JSON
  - Wsparcie dla CRUD
  - Metadane: `http://odataserwis.pl/$metadata`
- Strona główna: [www.odata.org](http://www.odata.org)

# Ekosystem

<b>IBM DB2 &amp; Informix</b>	DB2 & Informix can expose OData via Microsoft Visual Studio.
<b>IBM WebSphere eXtreme Scale</b>	WebSphere eXtreme Scale can expose OData enabling access from a variety of clients.
<b>JBoss Data Virtualization</b>	JBoss Data Virtualization allows you to import OData services and converts them to relational objects (tables and procedures).
<b>Lightswitch</b>	Microsoft Visual Studio LightSwitch is a development environment designed to simplify and shorten the development of data-driven businesses applications. Regardless of your development skills—whether you're a beginner or an experienced developer—LightSwitch enables you to quickly create professional-quality business applications and data services.
<b>Microsoft Dynamics CRM 2011</b>	The latest version allows you to query using OData
<b>Microsoft Dynamics NAV 2013</b>	Business data in Dynamics NAV 2013 ERP solutions can be accessed as OData Feeds. You can create "Self-service BI" solutions using PowerPivot for Excel to consume these feeds.
<b>OData Server</b>	Automatically generated REST server that exposes an OData above existed Microsoft SQL Server or MySQL database. The server also has access management features, such as users, roles and privileges management and ready to use UI project to perform these tasks.
<b>Priority Software</b>	Priority is an established ERP software available in the cloud or on premise and used by 7,000 customers worldwide. Priority offers a full business management package that is rich in functionality, fully integrative, simple to implement and easy to maintain. All user screens and application data in Priority are exposed as OData URLs according to the OData API specification.
<b>Progress DataDirect Cloud</b>	Progress DataDirect Cloud is a data connectivity service that exposes SaaS application data (e.g. Salesforce.com), on-premise relational data (e.g. Oracle), Big Data (e.g. Hadoop), and NewSQL/NoSQL data (e.g. MongoDB) as an OData feed.
<b>RemObjects Data Abstract</b>	Full multi-tier database application framework that supports publishing data for insert, select, update and delete via OData. Server libraries for .NET, Mono (Linux & OS X) and Delphi
<b>SAP NetWeaver Gateway</b>	SAP NetWeaver Gateway (formerly called "Project Gateway") is a technology that provides a simple way to connect devices, environments and platforms to SAP software based on market standards. It offers connectivity to SAP applications using any programming language or model without the need for SAP knowledge by leveraging OData-based REST services.
<b>SDL Tridion 2011</b>	SDL Tridion is a Web Content Management solution, the Content Services component now supports OData
<b>SQL Server 2012</b>	Microsoft SQL Server 2012 Reporting Services can expose data from reports as OData
<b>Savigent Software Catalyst xM</b>	The Open Data Protocol provides easy access to Catalyst xM™ workflow execution history from a variety of off-the-shelf data mining and business intelligence tools and is an ideal choice to expose manufacturing intelligence from Catalyst xM™ to browser-based and mobile clients. The Catalyst xM Server Manager provides a Data Source Builder which allows users to configure virtual tables that are created dynamically to provide data access via the Open Data Protocol.
<b>ScanJour WorkZone Content Server</b>	ScanJour WorkZone is a Case and Document Management System which implements OData API for full manipulation of all data, cases and documents.
<b>SharePoint</b>	Any data you've got on SharePoint as of version 2010 can be manipulated via the OData protocol, which makes the SharePoint developer API considerably simpler.
<b>Sitefinity CMS by Telerik</b>	The Sitefinity CMS by Telerik is ready to host OData services. With the powerful API, any developer can expose any information from the CMS through a custom OData service. For more info, visit
<b>Team Foundation Server</b>	An extension to Team Foundation Server Server 2010 and 2012 that allows you to browse TFS data using the OData

# Szybki przegląd

- <http://www.odata.org/getting-started/understand-odata-in-6-steps/>

# Podstawy języka zapytań

- Zapytania
  - \$filter, \$orderby, \$top, \$skip, \$select, \$expand
  - \$inlinecount=allpages - liczba wszystkich rekordów
    - nawet jeśli użyjemy top, skip
- Operatory logiczne
  - and, or, not, eq, ne, lt, gt, le, ge
- Operatory arytmetyczne
  - add, sub, mul, div, mod
- Funkcje napisów
  - substring, length, indexof, startswith, endswith, insert, remove, replace, tolower, toupper, concat, trim
- Funkcje daty
  - day, hour, minute, month, second, year
- Funkcje matematyczne
  - add, sub, mult, div, round, floor, ceiling

# Początki

- Przykładowa usługa dostępna pod adresem
  - <http://services.odata.org/V4/TripPinServiceRW>
- Podstawowe operacje pod adresem
  - <http://www.odata.org/getting-started/basic-tutorial/>
- Przykładowy zestaw zapytań
  - <http://www.odata.org/getting-started/learning-odata-on-postman/>

# OData w ASP.NET

- <http://www.asp.net/web-api/overview/odata-support-in-aspnet-web-api/odata-v4/create-an-odata-v4-endpoint>



# Narzędzia i biblioteki

- Narzędzia z odata.org
  - OData Validator
  - OData API Explorer
  - XOData
- Do prezentacji danych
  - LINQPad (wersja darmowa obsługuje OData)
  - Excel
    - Sprawdzamy na <http://services.odata.org/AdventureWorksV3/AdventureWorks.svc>
  - Kontrolki różnych firm

# Narzędzia i biblioteki

- HTTP
  - natywne programowanie XML/JSON
- AJAX
  - jQuery, DataJS, JayData
- Obecnie są dostępne biblioteki dla większości technologii
  - .NET, WPF
  - Java, Android
  - iPhone