# RESO Transport Workgroup

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# Agenda

- What we are trying to achieve
- Where we started
- Where we are now
- Details
- Questions / Answers / Discussion / Debate
- Next Steps / Actions / Timing

# What we want to accomplish

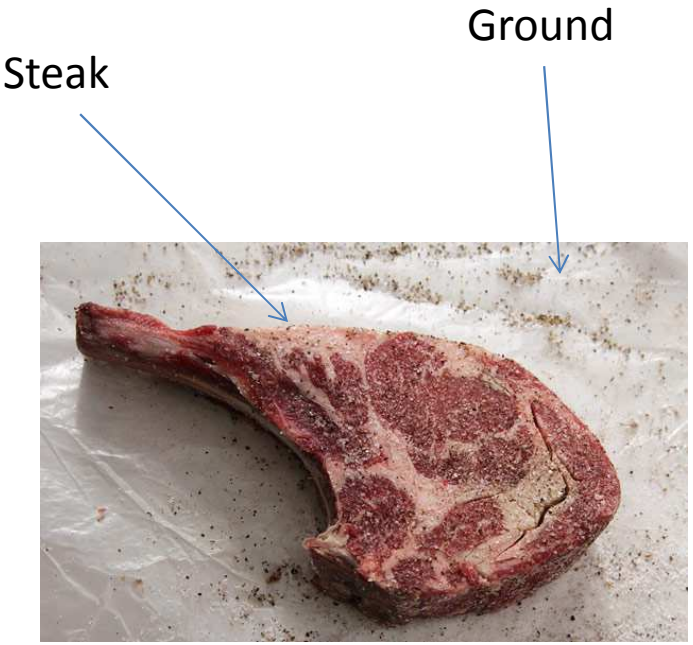
- A “modern” (relevant) transport standard for our industry
- Something based on REST, lightweight
- That reduces the amount of data replication
- That better controls the flow of data
- That provides better access options for the “common” developer
- That does NOT require a massive lift for all vendors involved

# Where we started

- A year ago – what's the "best path forward?"
  - Lots of votes for OData
  - Lets not re-invent the wheel
  - Lets adopt something with legs
- Dug into it, discussed, debated
  - Other options emerged
  - Existing APIs depart from OData
  - Found various advantages and limitations

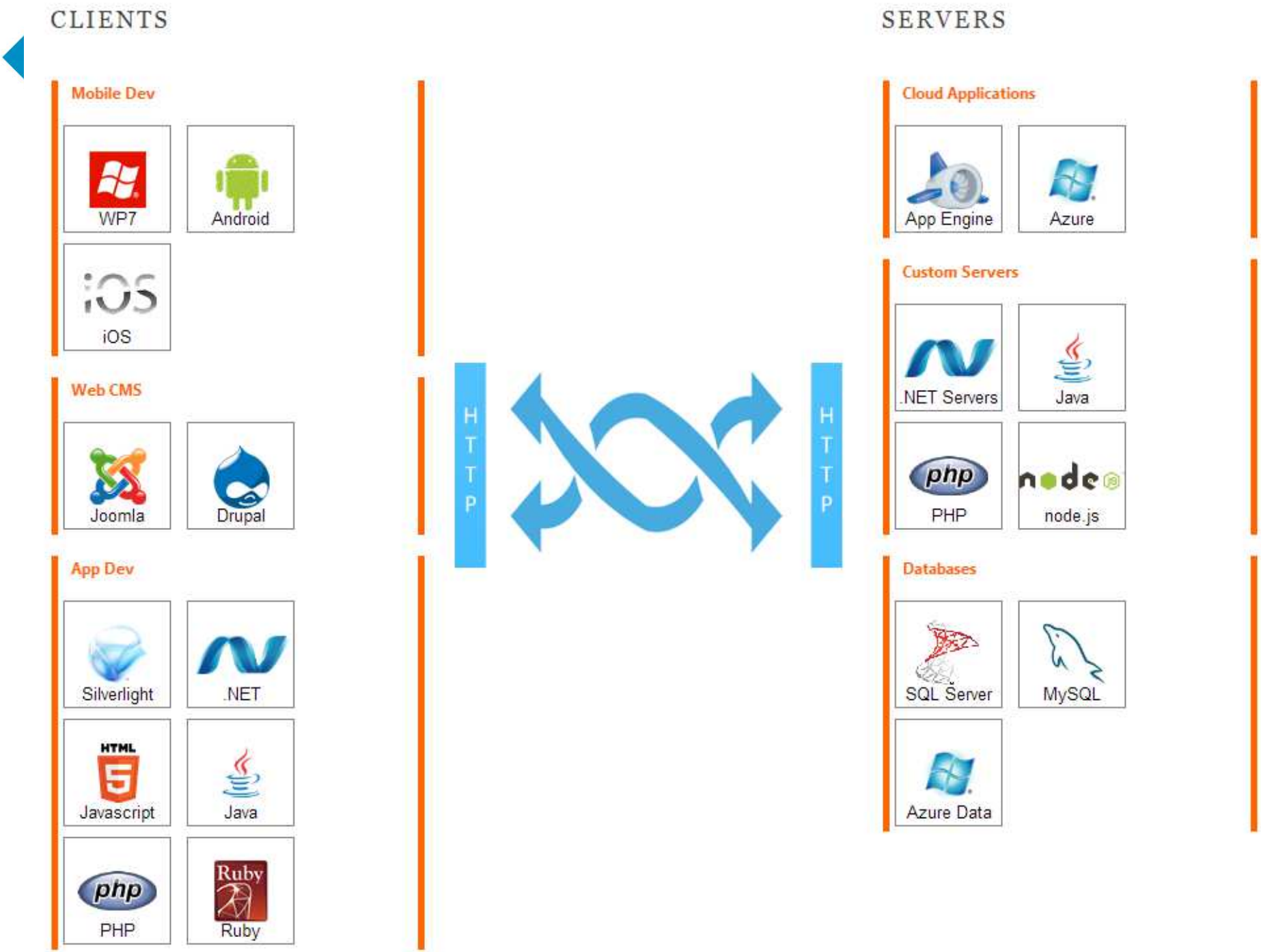
# Where we are now

- Proposing OData as our stake in the ground
- This is the path we want to drive down
- We need to get to agreement
- There's still debate
  - Why?
    - OData is only for .Net?
    - Better options available?
    - OData is too complex?
    - OData just won't work?



# What is OData?

- OData is an application-level protocol for interacting with data via RESTful web services
- Designed for the problem area we are focused on
- Initially, very focused on ATOM / XML
- Initially driven by Microsoft
- Now taken up by OASIS
  - Organization for the Advancement of Structured Information Standards


CLIENTS
Mobile Dev
WP7
Android
iOS
Web CMS
Joomla
Drupal
App Dev
Silverlight
.NET
Javascript
Java
PHP
Ruby
HTTP
HTTP
SERVERS
Cloud Applications
App Engine
Azure
Custom Servers
.NET Servers
Java
PHP
node.js
Databases
SQL Server
MySQL
Azure Data

# Pros & Cons of OData

## Pros

- Already a working standard
- OData Filter and Query support is extremely comprehensive
- Encapsulates search & syndication in one
- No one has to write own query parser
- Supports XML (ATOM) and JSON
- Reference implementation already exists
- Validation / Compliance tools available
- Data model agnostic
- Supports modern technology – Jquery, JavaScript, mongoDB, iOS, Android…
- Support for .Net, Java, PHP, Ruby, Oracle, SQL Server, MySQL, nodeJS…
- Built for what our industry does

## Cons

- Primary driver was Microsoft
- Some key limitations, namely, geographic search
- JSON support still maturing
- Some departures from REST principles
- Other, competing standards like GData

# Reality

- Any choice we make will have pros and cons
- Every approach taken to date makes compromises on REST principles
- No matter what approach the community will have work to do
- OData is not perfect, but it’s a solid foundation that we can work with

# Scope

- Query (Search)
  - Not Create, Update, Delete to start
- Focus on key resources
  - Listings
  - Members
  - Offices
  - Media
- Extending to other resources is a “roadmapping” exercise

# Scope

- We will extend OData where needed
  - “Functions” are the mechanism
  - Reference implementations for any new extension
  - We will promote back to OASIS

# Core Recommendations

- Transport will standardize how to search by individual data types (how to search by string, number, list, lookups, etc)
  - 3 key string functions
  - 9 additional logical functions on numbers, strings, dates
- Pagination is defined in OData, use that functionality
- URI will have …/reso/complianceVersion/property/…
  - Media will be accessed via hyperlink
- Endpoint defines the payload (example)
  - /mobile/listing
    - <id=…>
    - <property HREF= …>
- Can also do select statement to limit to specific fields

# Core Recommendations

- Use functions to implement views that you want.
- This helps with things like
  - Implementing payloads
  - Implementing Saved searches
  - Implementing Saved select statements (like “short cuts”)

# Challenges/ Limitations we Found

- Geographic search
  - Point + Radius, Polygon functions
- Select and sub-select (Get statements)
  - Various payloads like “mobile”
- Lookups
  - Can be handled by “collection elements”
- Missing some “convenience” factors
  - Using “Any” and “All” solves this
- Compliance
  - Need to dig into OData compliance tools

# What's next?

- Additional resources
  - Tax, History, Contacts, Events, Statistics, etc.
- Additional use cases
  - Syndication, Replication, etc.
- Additional geographic search types
  - Line, multi-polygon, etc.
- Getting a connection with OData team to help promote our agenda

# Next Steps

- Propose to board for approval to move forward
- Call for assistance from the team
  - A few key items to iron out
- Initial draft out to community for comment
- Incorporate feedback / improvements
- Get final proposal out for ratification

Thank You!