

# **REST ARCHITECTURE STYLE**




## INTRODUCTION

- REST means Representational State Transfer
- REST is designed for distributed hypermedia systems, such as the World Wide Web
- Introduced by Roy Fielding in 2000 via his doctoral dissertation
- Alternative to SOAP and CORBA
- Offers a simple interface with a semantic representation of data

## OVERVIEW

### REST

- developed in parallel with HTTP 1.1, based on the HTTP 1.0 protocol
  - not limited to HTTP 1.1, other OSI Layer 7 protocols are valid
  - consists of clients and servers; the role can change based on business logic
- 
-  Authentication over HTTP is achieved with Basic Access due to varying browser implementations of Digest Access; SSL is recommended

## WHAT DOES IT MEAN TO BE RESTFUL?

- Clients and Servers are separated by a Uniform Interface, creating a separation of concerns (storage, state, etc.)
- The communication between Clients and Servers are stateless; the Server can be stateful and must be addressable from URI as a resource
- Client caching is implicit or explicit
- Clients do not know if they are talking to an intermediary or end Server (layer system); a Server can be a Client caching resources from another Server

## UNIFORM INTERFACE PRINCIPALS

- Resources are identified by URI in a /collections/entity structure
- A Client holds a representation of a resource which can be modified or deleted, if the Client has permission to do so
- Representations are self-descriptive; e.g. a MIME type header is sent over HTTP, the cacheability is declared, etc.
- Hypermedia as the Engine of Application State (HATEOAS); i.e. include related resources in a response

## EXAMPLES OF REST

- Atom (Publishing Protocol) is implemented by many Web Applications and Services; e.g. Wordpress, Drupal and Flickr
- CouchDB is a NoSQL database engine that provides a RESTful JSON API
- ExtJS 3.0 added REST support for Data Stores used by Components (Widgets)
- aFrame is a pure RESTful JavaScript framework (in dev)
- Windows Azure Services Platform has a REST API