An HTTP-based DECADE Resource Protocol

draft-wang-decade-drp-01

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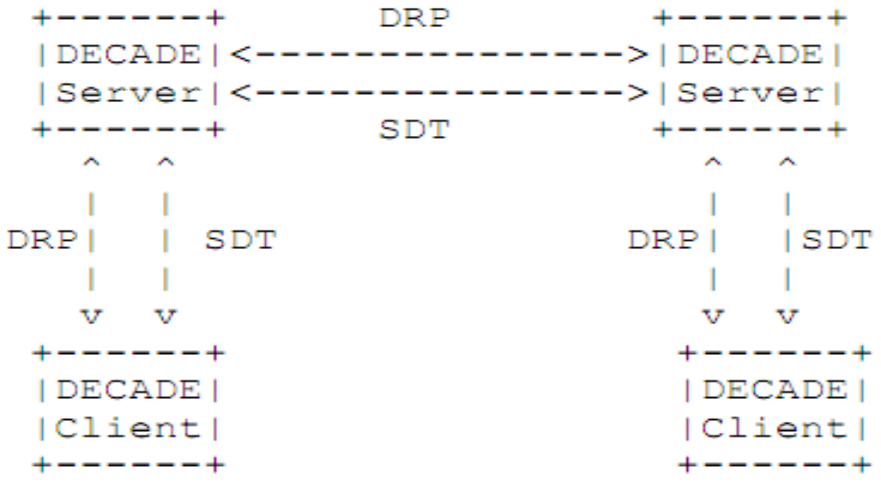
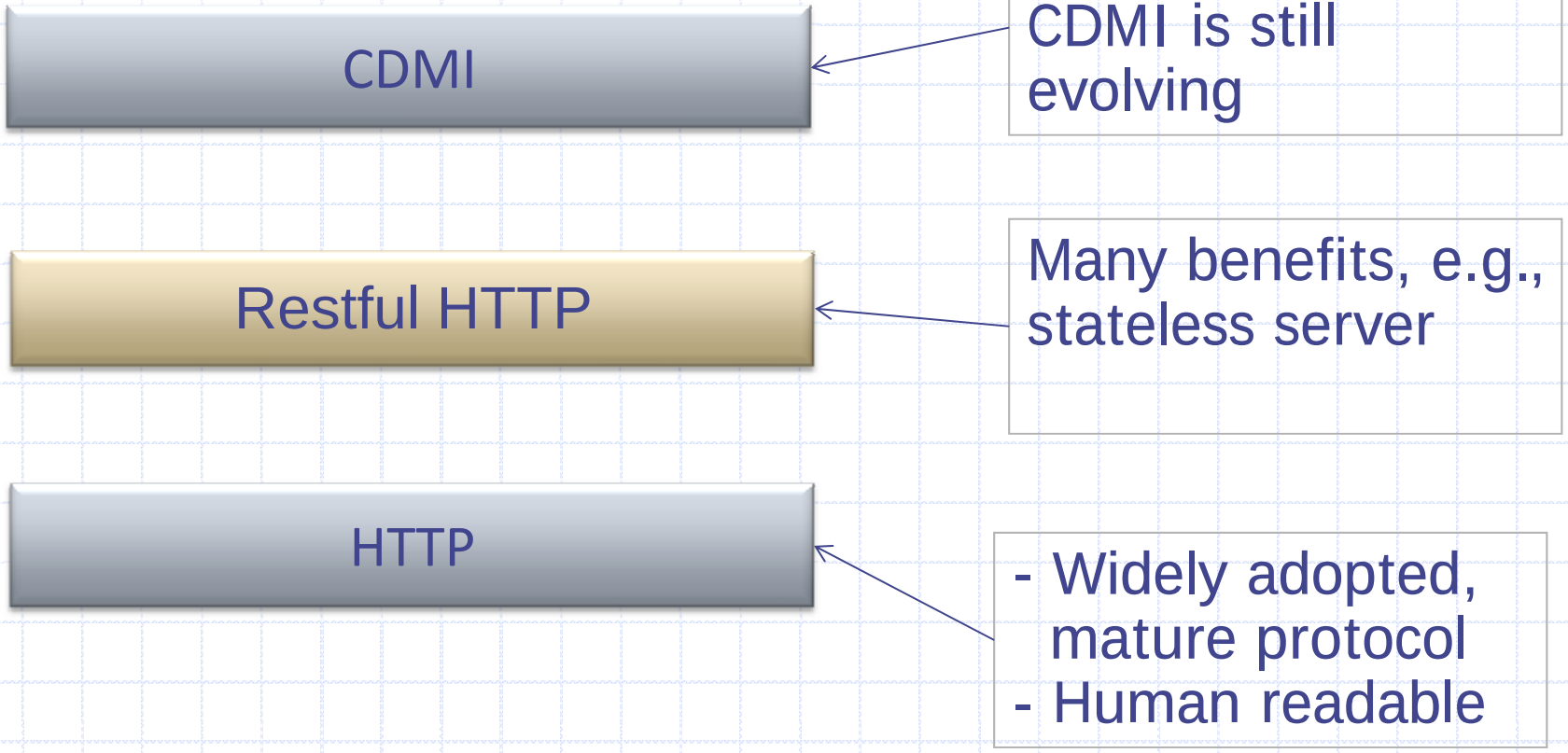
Overview

- Involved Function Entities
- DRP & SDT
- Protocol Architecture



Design Base


CDMI
Restful HTTP
HTTP
Major concern:
CDMI is still
evolving
Many benefits, e.g.,
stateless server
- Widely adopted,
mature protocol
- Human readable

Major DRP Functions

- Set
  - Resource Access Control: who can access
  - Resource Usage Control: how much can access
- Get
  - Resource State/Status Query
- (Futuristic) Content forwarding state

Two Major Design Options

- Setup state at server
  - Analogy: “connection oriented”
  - Example: setup ACL on each object for access control
- Carry state by request
  - Example: Token for access control

Token V.S. ACL

- Token
  - May or may not need to use identity
    - App can implement flexible access control policy
  - May need to verify each token
- ACL
  - May be based on multiple request attributes
- Question: anything that can be implemented by ACL can always be by token?

Parameters in Token

- Permitted operations
- Permitted objects
- Permitted clients
- Expiration time
- Priority

Message Design – DRP Messages

- Transport_Query
- Access_Token (may or may not need)
- Server_Status_Query
  - From system's view
  - From user's view
- Object_Property_Query
- Object_Property_Set

SDT Messages

- Make extension to include tokens
  - Put_Data
  - Get_Data
  - Delete_Data

Security Consideration

- Token leaking
  - Associate token w/ IP address to reduce the problem?

Next Step

- Remote_Get Message
- A Mandatory Naming Scheme
  - Improve interoperability and deduplication
- Detailed Protocol Design

Thank you !