

Information-Centric Networking Side Meeting

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DTNRG Meeting at IETF-81

Information-Centric Networking Side Meeting

- Tuesday, July 26th, 13:00 – 15:00
- Room 303AB
- Intention:
 - See whether there is interest in forming an IRTF RG on Information-Centric Networking (ICN)

Information-Centric Networking

What's it all about?

Delay-Tolerant Networking

- Communication without permanent end-to-end paths
 - Leveraging occasional contacts (scheduled or not) and resulting connectivity patterns
- Different purposes
 - Extending the infrastructure
 - Connecting mobile nodes without infrastructure: opportunistic networking
 - Connecting networks with scheduled connectivity

DTN Noteworthy Principles

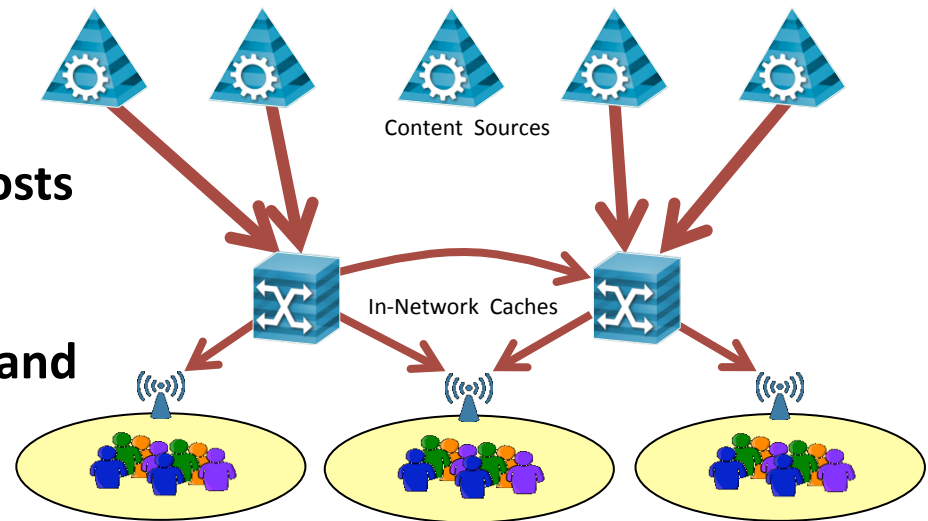
- No assumption on where networks end
- Nodes can provide storage (and take over custody)
- Endpoint identifiers
 - Can name nodes – application-specific namespace
 - Can be used for forwarding decisions
- Convergence layers
 - Bundle forwarding service over all sorts of underlays
- Routing not tied to base architecture
 - Diverse heterogeneous deployment scenarios

DTN Routing

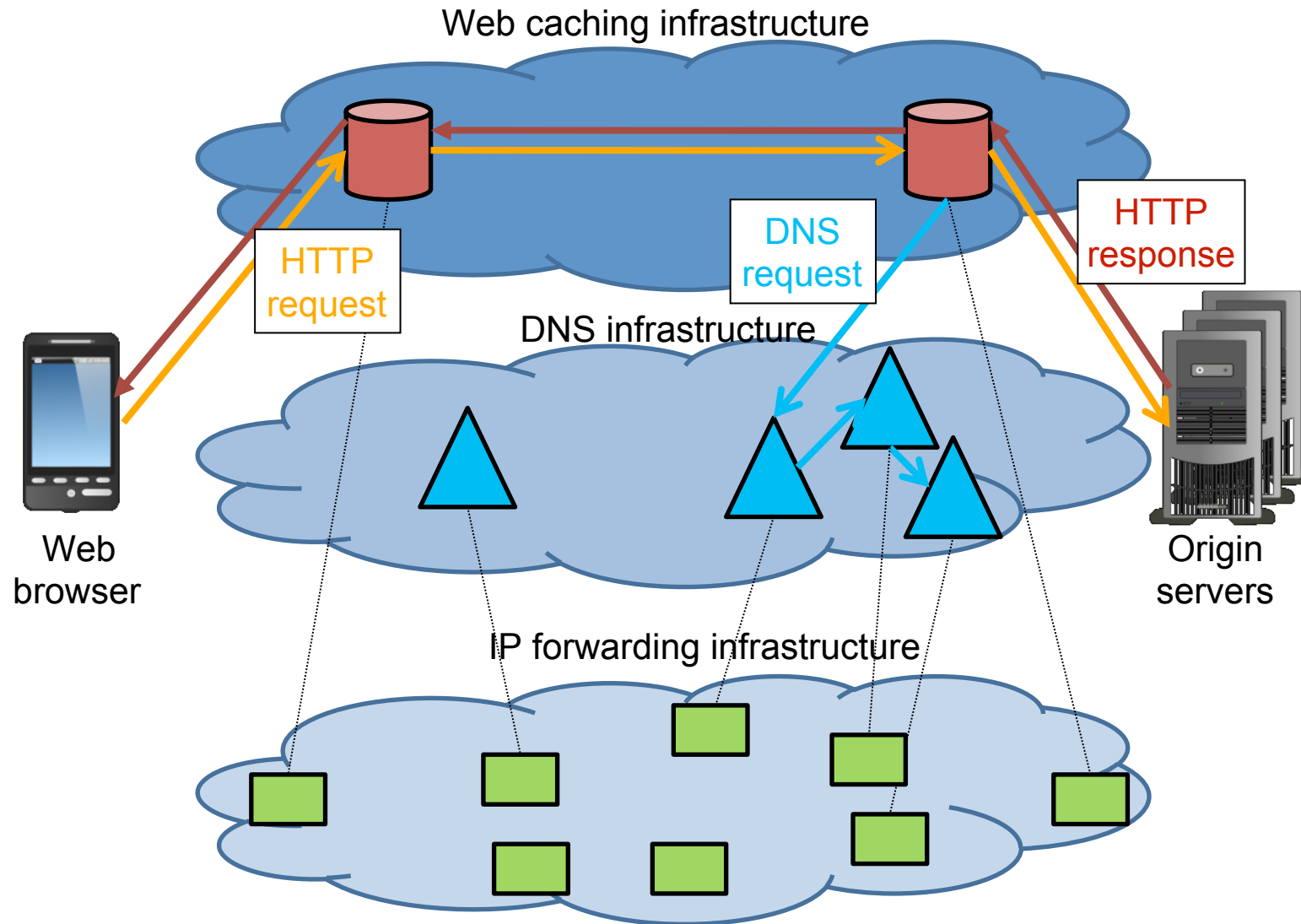
- Enhance bundle forwarding decisions
 - For instance: do better than flooding
- Can really be based on different kinds of information
 - Static configuration
 - Contact history & prediction
 - Scheduled contacts
- Does not even have to be based on endpoint identifiers
 - For instance: pub/sub over DTN
 - Skuolla experiment

Information-Centric Networking

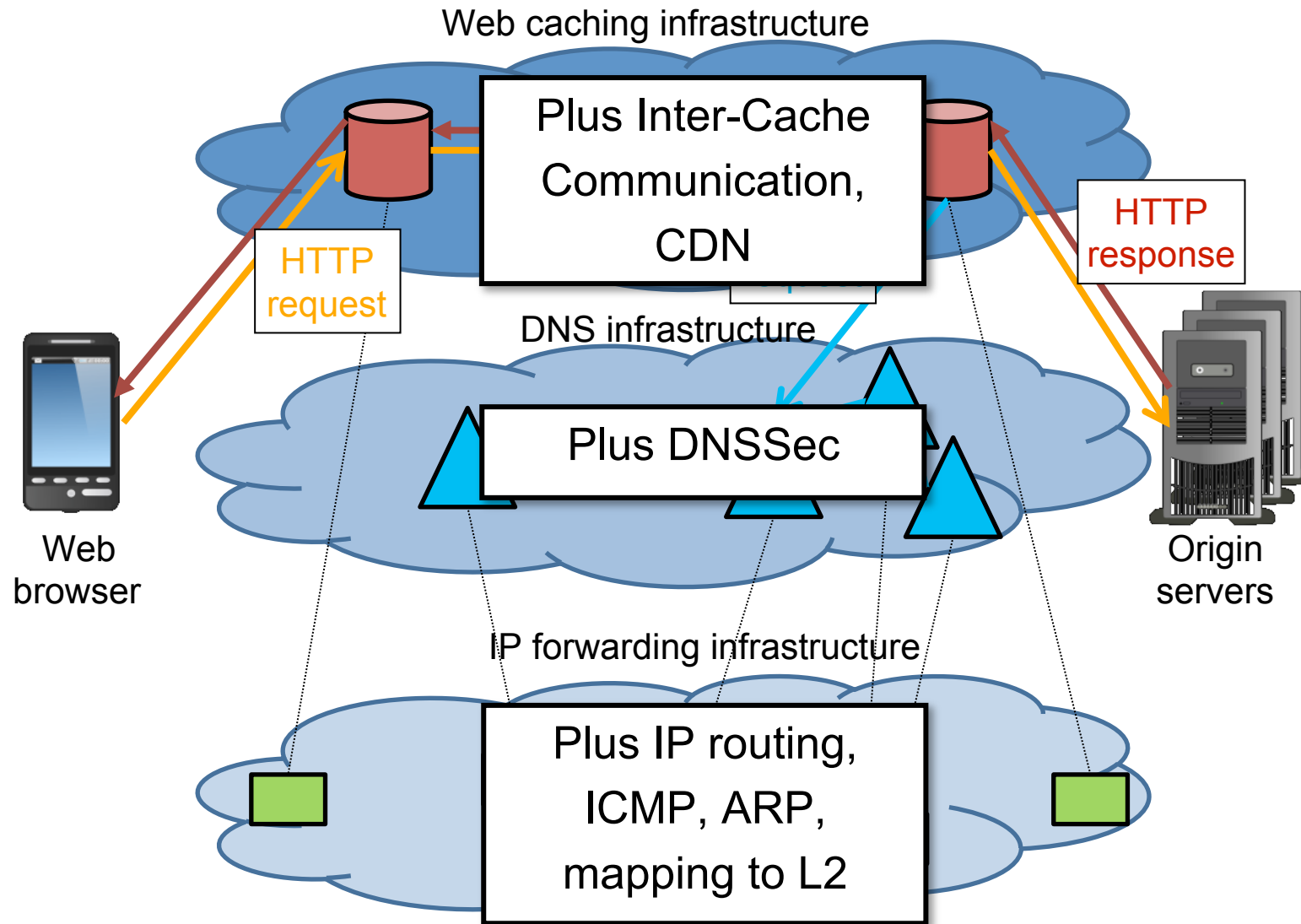
- Since we are mostly accessing named resources anyway
 - Design the network so that this is optimally supported
- Considering important requirements
 - **Accessing named resources – not hosts**
 - **Scalable distribution through replication and caching**
 - **Good control of resolution/routing and access**
- With ubiquitous caching
 - But for all applications
 - And for all users and content/service providers



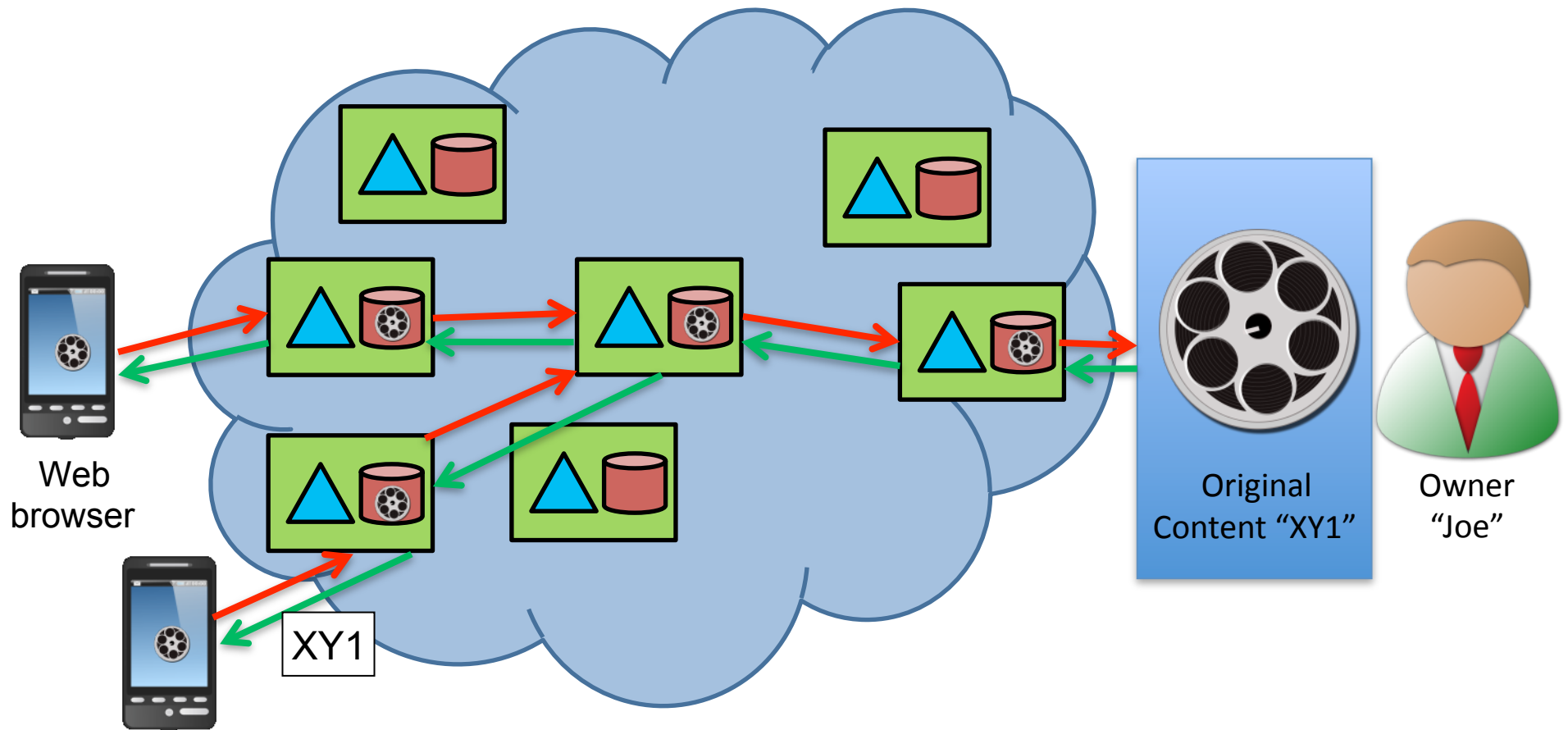
From Web-based Information Retrieval...



From Web-based Information Retrieval...



To ICN-based Information Retrieval



Key ICN Properties

- Network service: access to named information
 - Persistent names, independent of resource location
 - Providing caching and access to ‘optimal’ copy
- Secure name-content binding
 - And other security services
 - Not as an afterthought but as fundamental property

Expectations

- Users
 - Better services, better performance and robustness
- Operators
 - Better controllability, better efficiency
 - New business models (receiver-oriented...)
- Application developers
 - Better infrastructure support for services
 - Consistent, simplified information access

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- Thanks!