



Rest here



Goals

Not programming
Architecture and Design



REST

REpresentational State Transfer



Introduction to REST

Key drivers

Architectural properties

What is REST ?

Richardson Maturity Model



Key drivers of REST

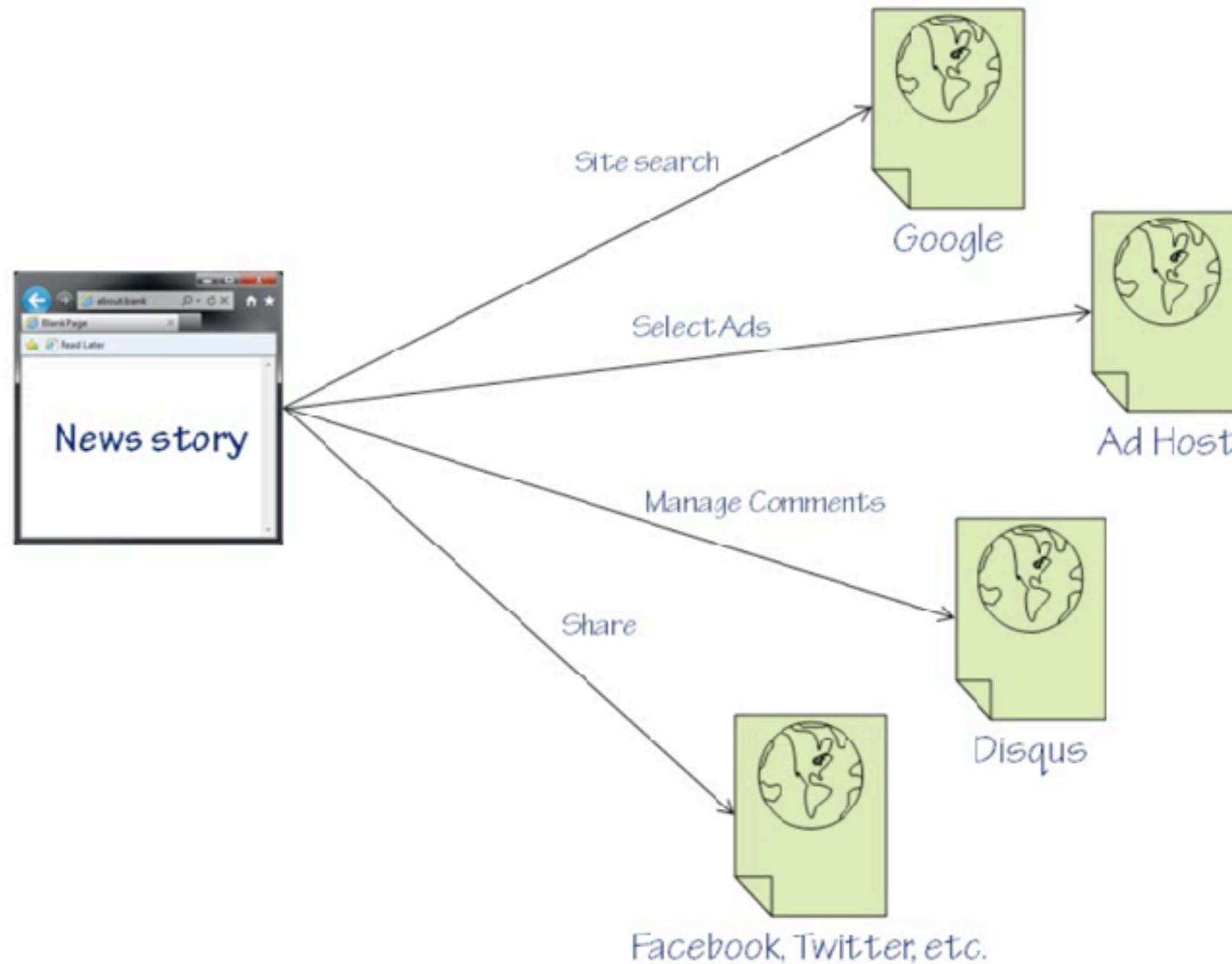
Heterogeneous Interoperability

Devices

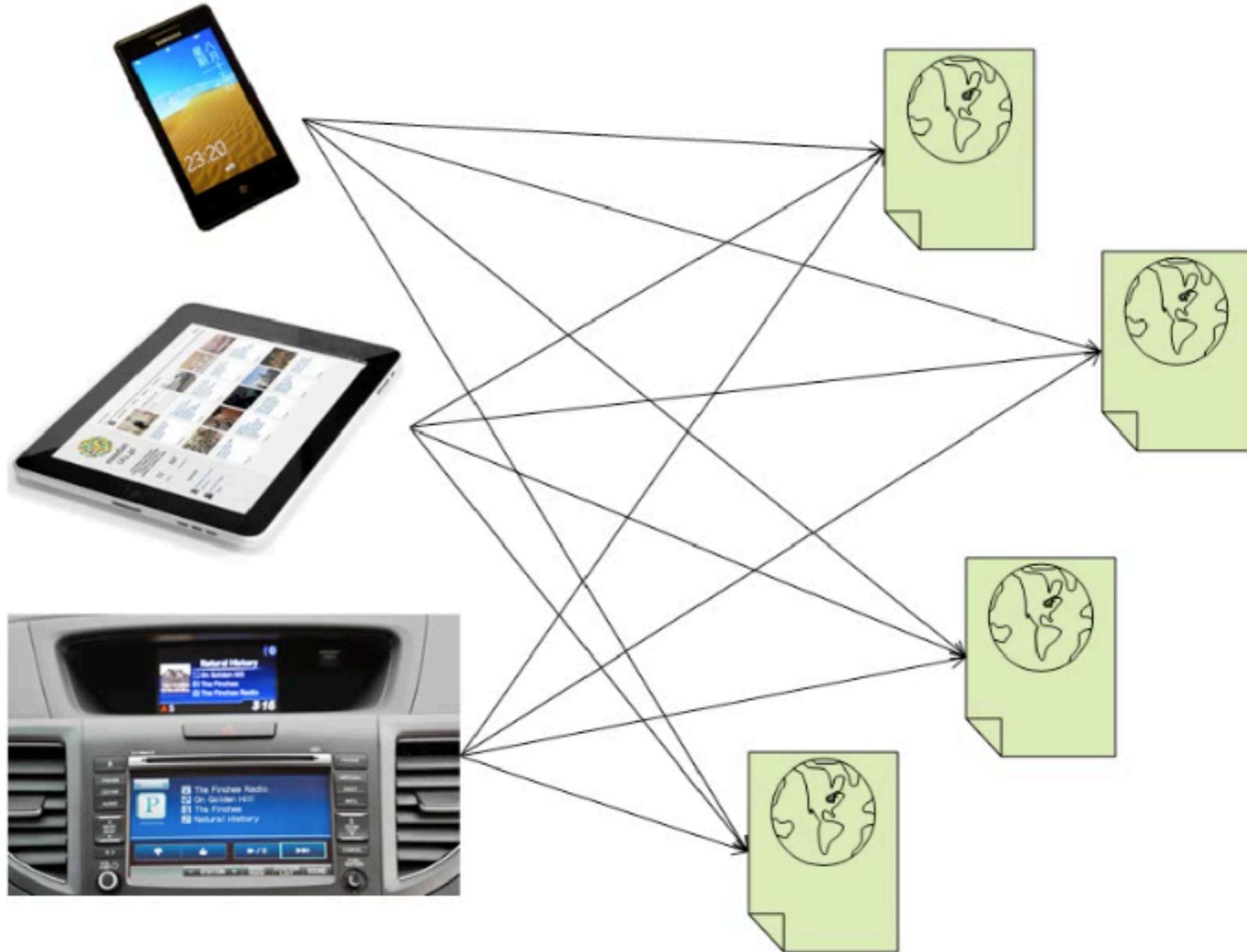
Cloud



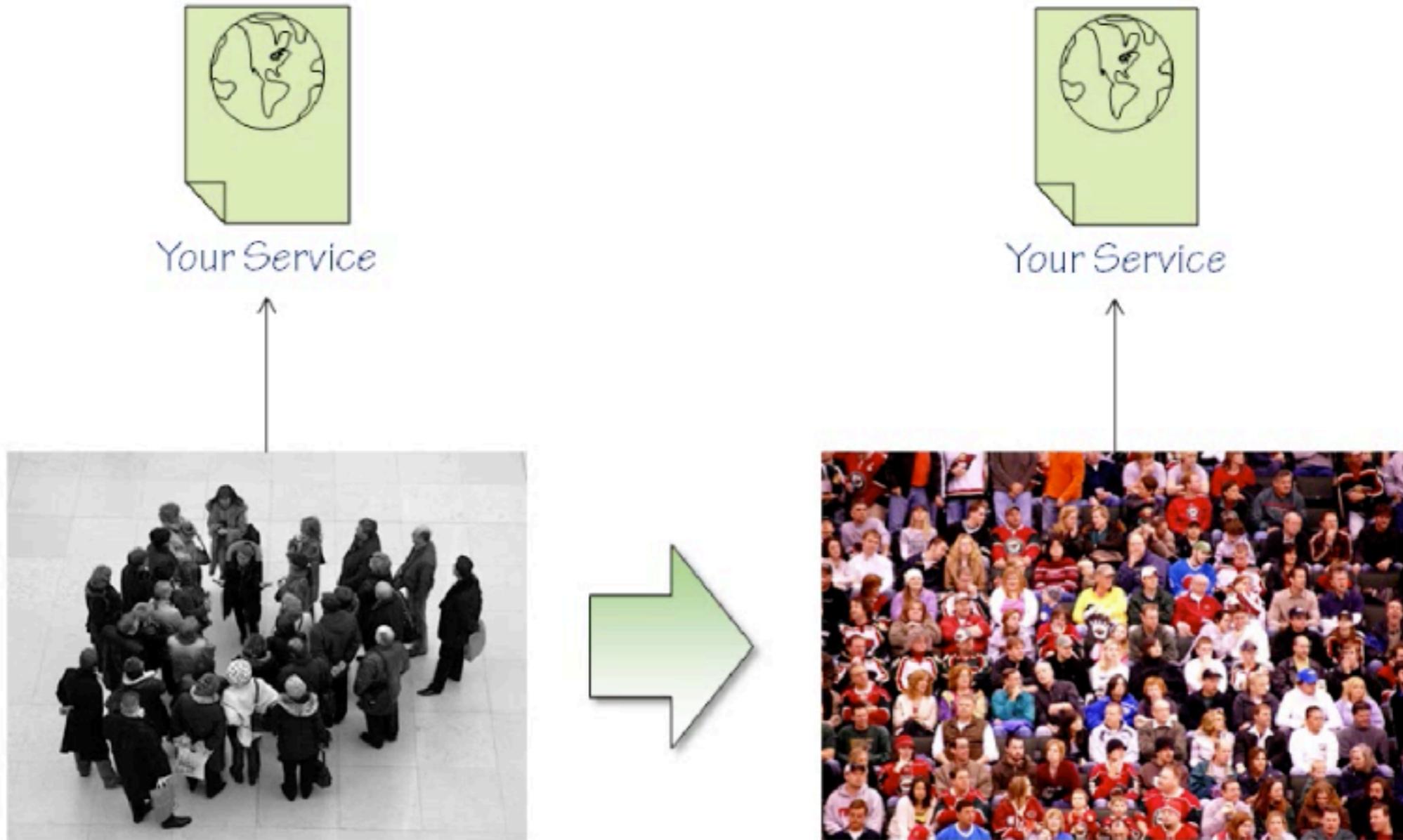
Heterogeneous Interoperability



Devices

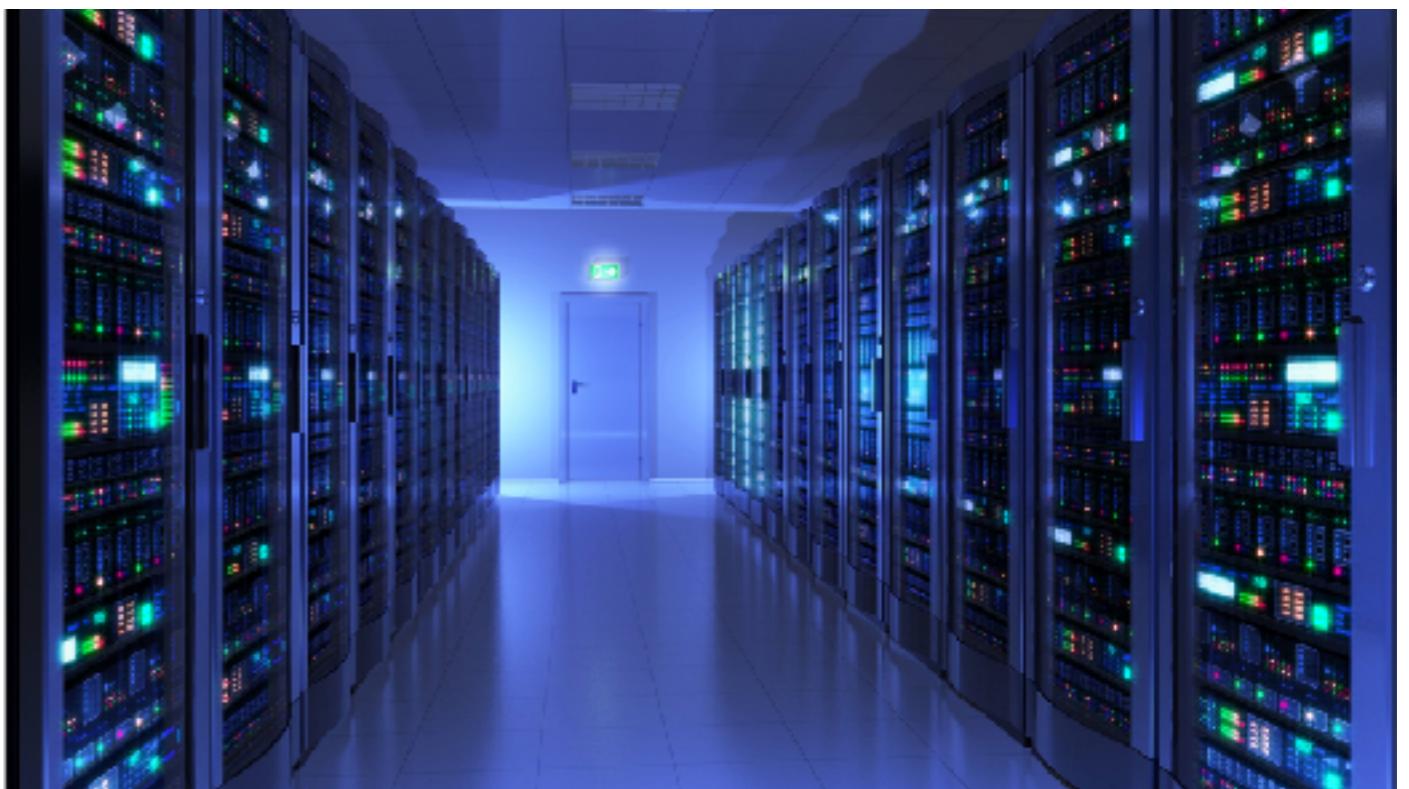


Cloud



**“It is critical to build a scalable architecture in
order to take advantage of a scalable
infrastructure”**

Move to Cloud



Properties of REST

Heterogeneity

Scalability

Evolvability

Visibility

Reliability

Efficiency

Performance

Manageability



Quiz

Heterogeneity



Scalability

Evolvability

Visibility



Reliability

Efficiency

Performance



Manageability

What is REST ?

Architectural style

First introduced in 2000



What is not REST ?

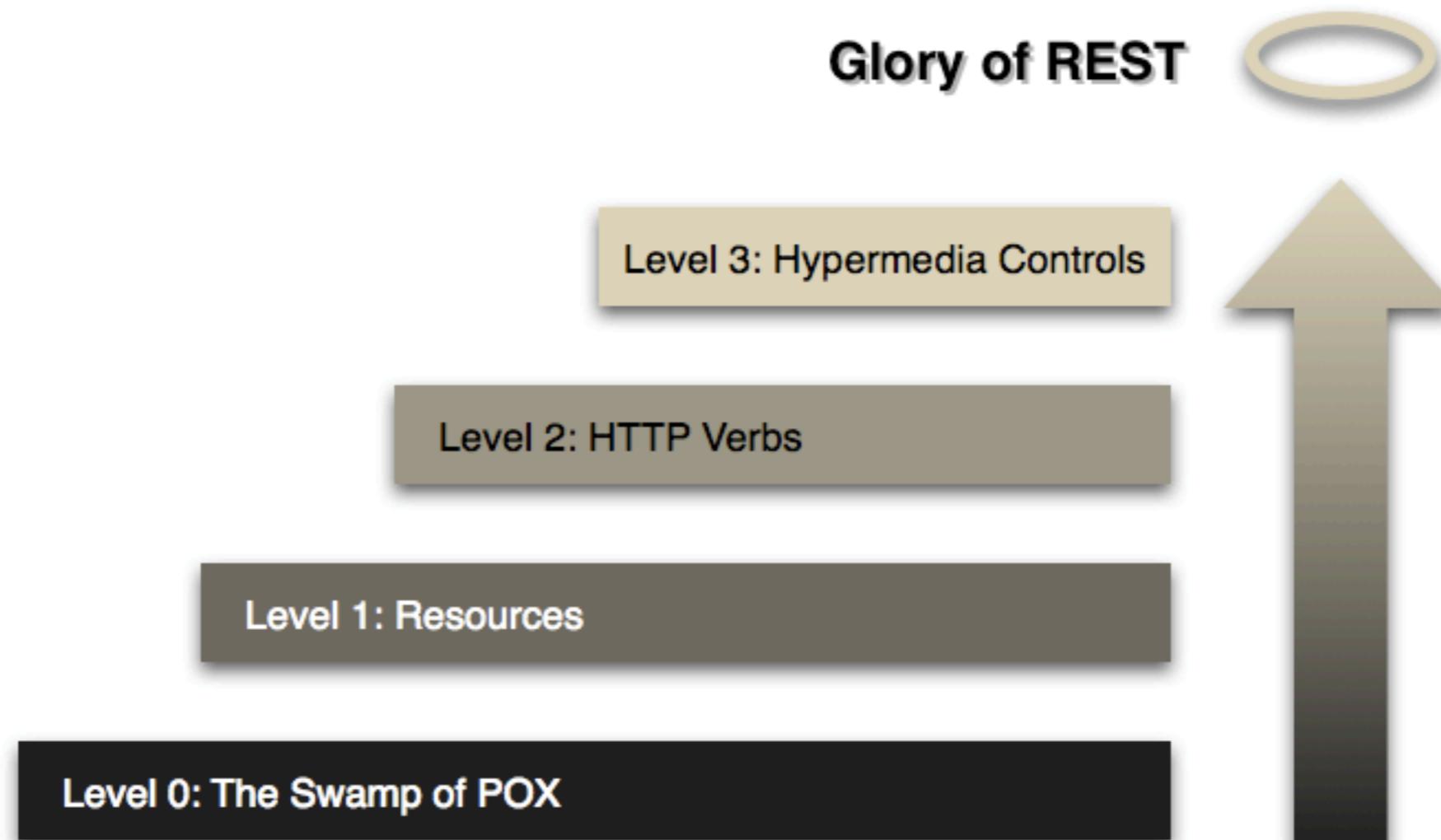
Protocol

RPC (Remote Procedure Call)

HTTP



Richardson Maturity Model

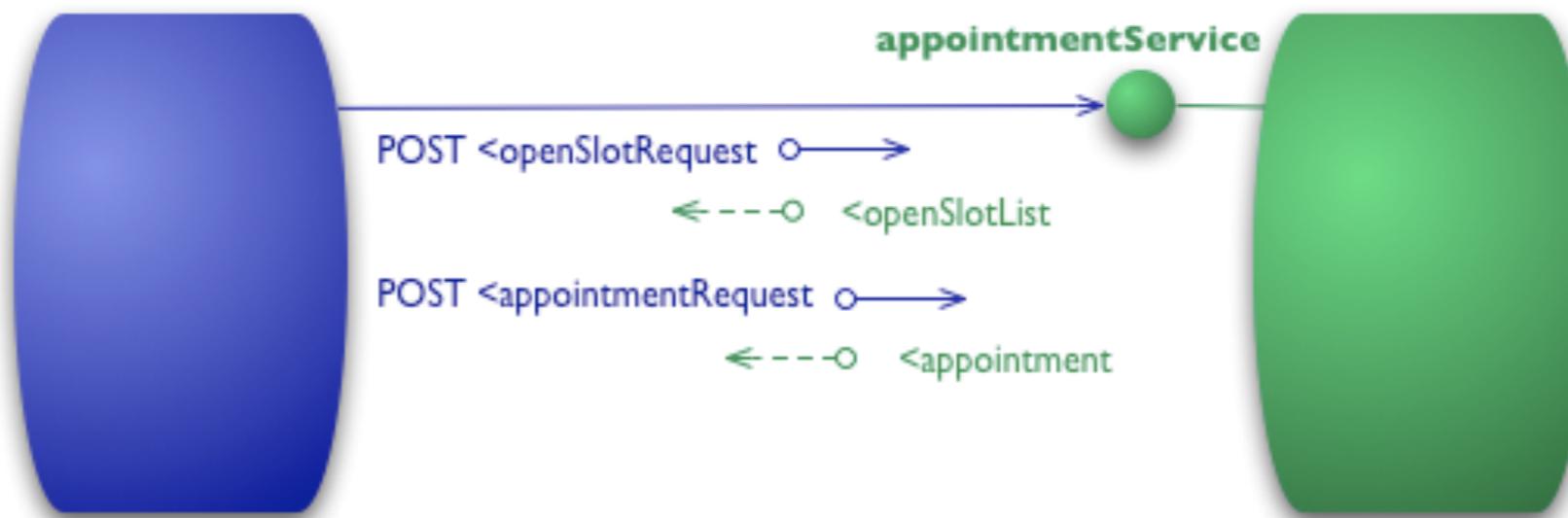


<https://martinfowler.com/articles/richardsonMaturityModel.html>



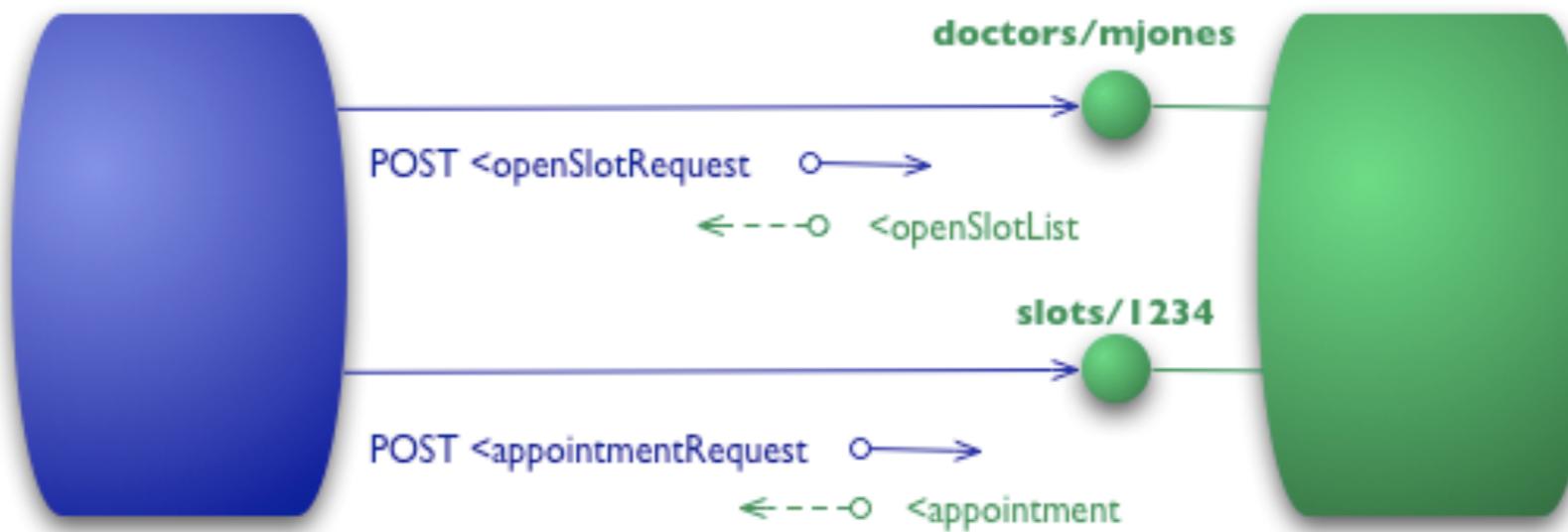
Level 0

Remote Interaction mechanism



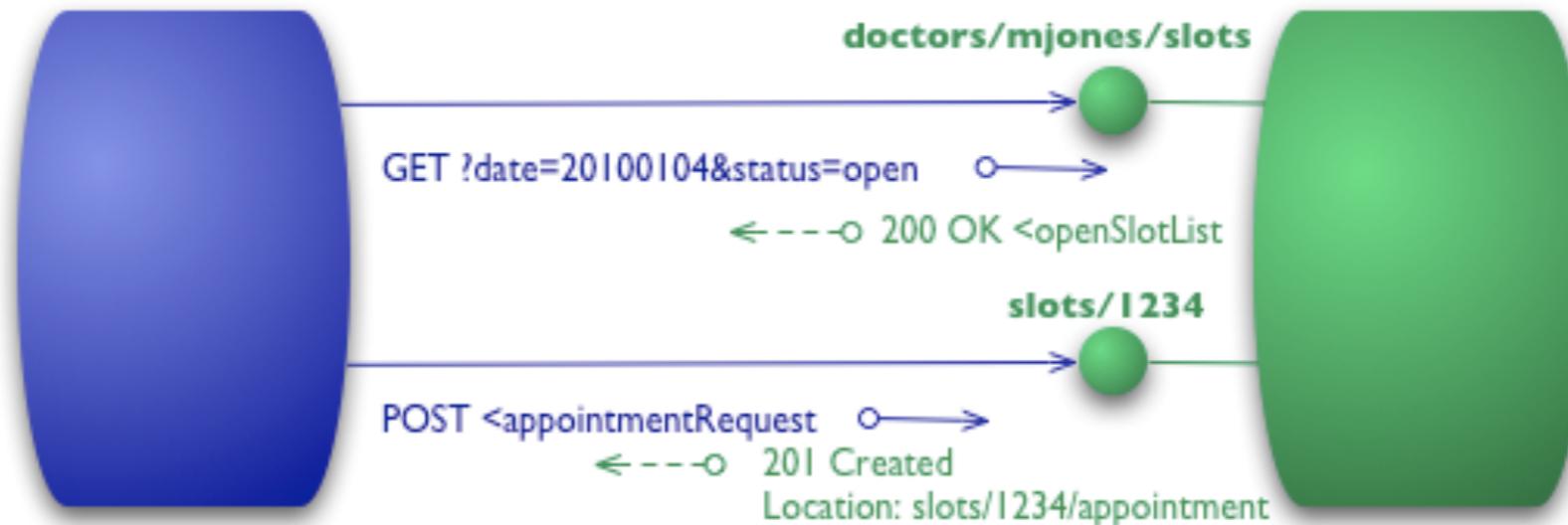
Level 1 :: Resources

Individual resources



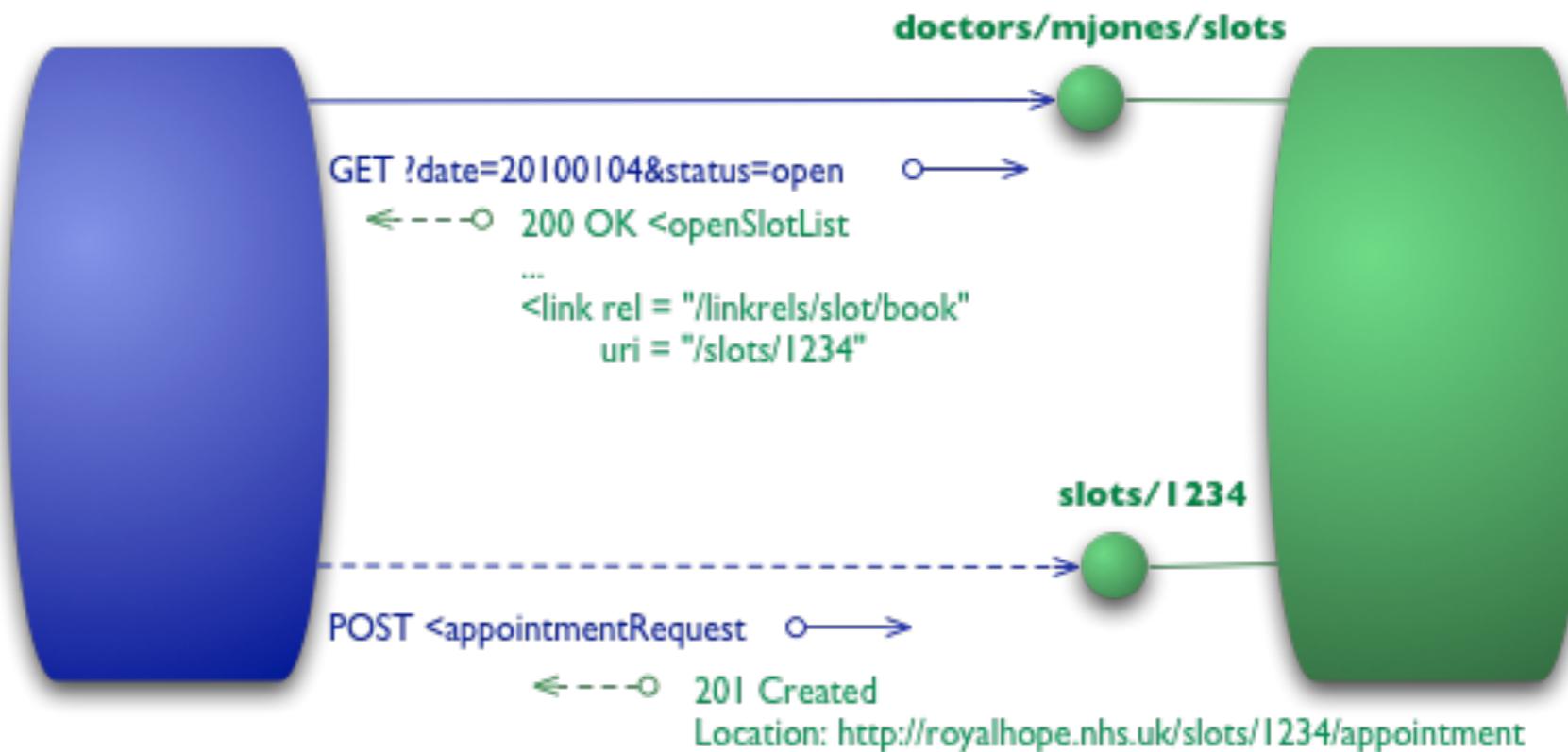
Level 2 :: HTTP verbs

Interaction through HTTP



Level 3 :: Hypermedia controls

Self-Document



Summary

Level 1

breaking a large service
into multiple resources



Summary

Level 2

Standard set of verbs



Summary

Level 3

Discoverability, provide a way of making a protocol more self-documenting



REST constraints



REST constraints

Client-server

Stateless

Cache

The Uniform Interface

Layered system

Code-on-Demand



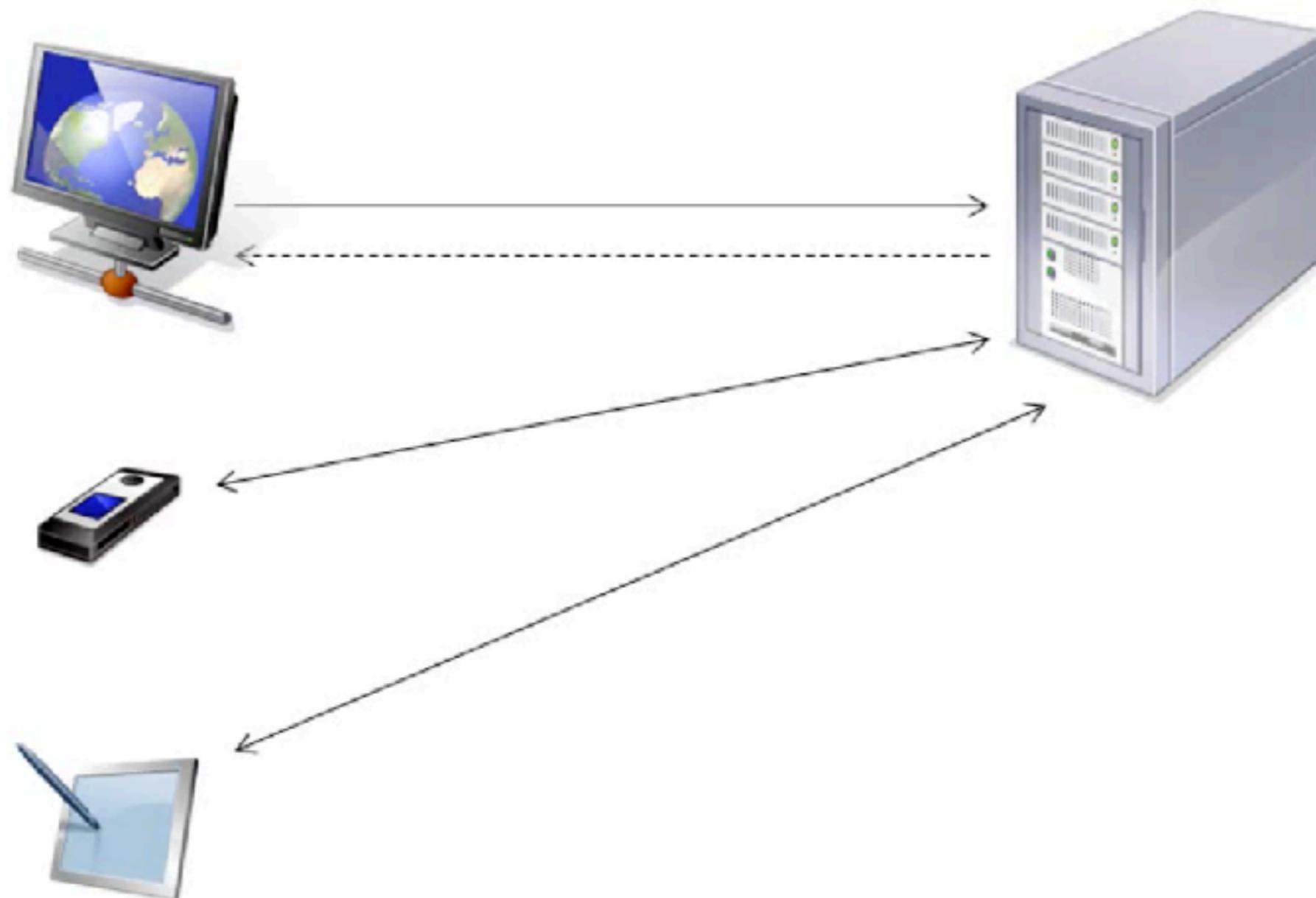
Client-server



Client-server



Client-server



Concerns

Security

Administration

Heterogeneous network

Complexity



Benefits

Portability of clients

Scalability

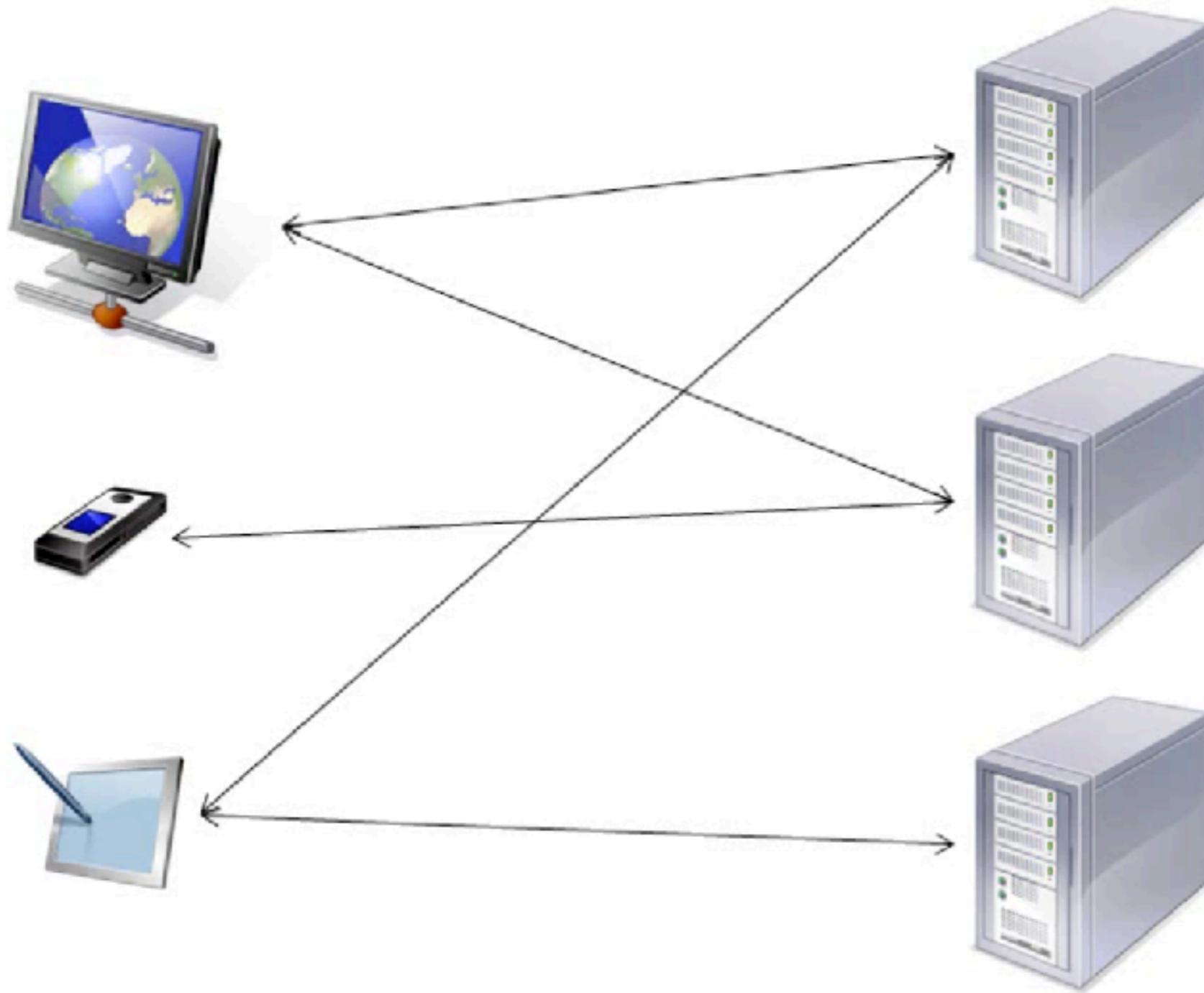
Evolvability



Stateless



Stateless



Concerns

Network reliability

Network topology

Complexity

Administration



Benefits

Visibility

Reliability

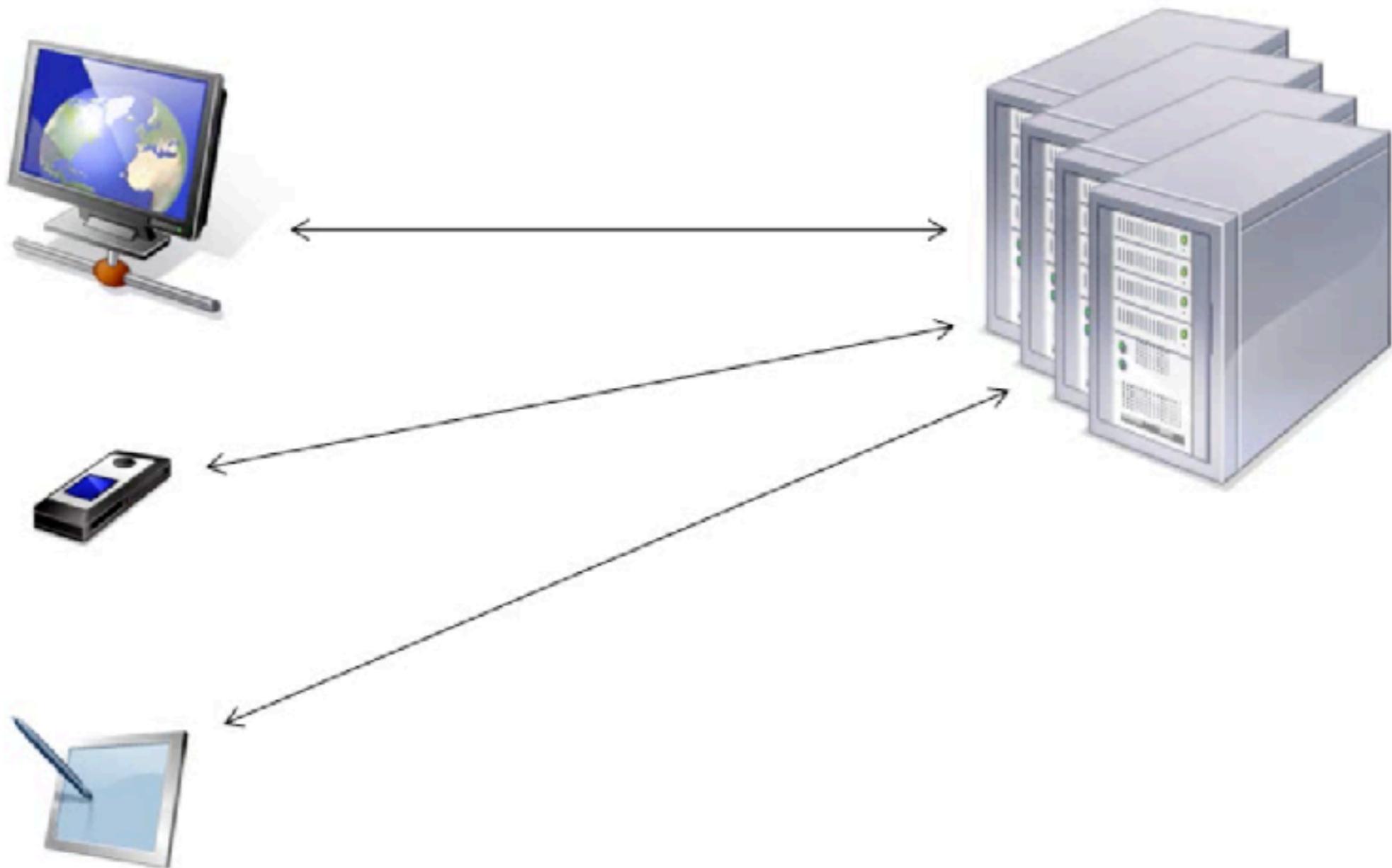
Scalability



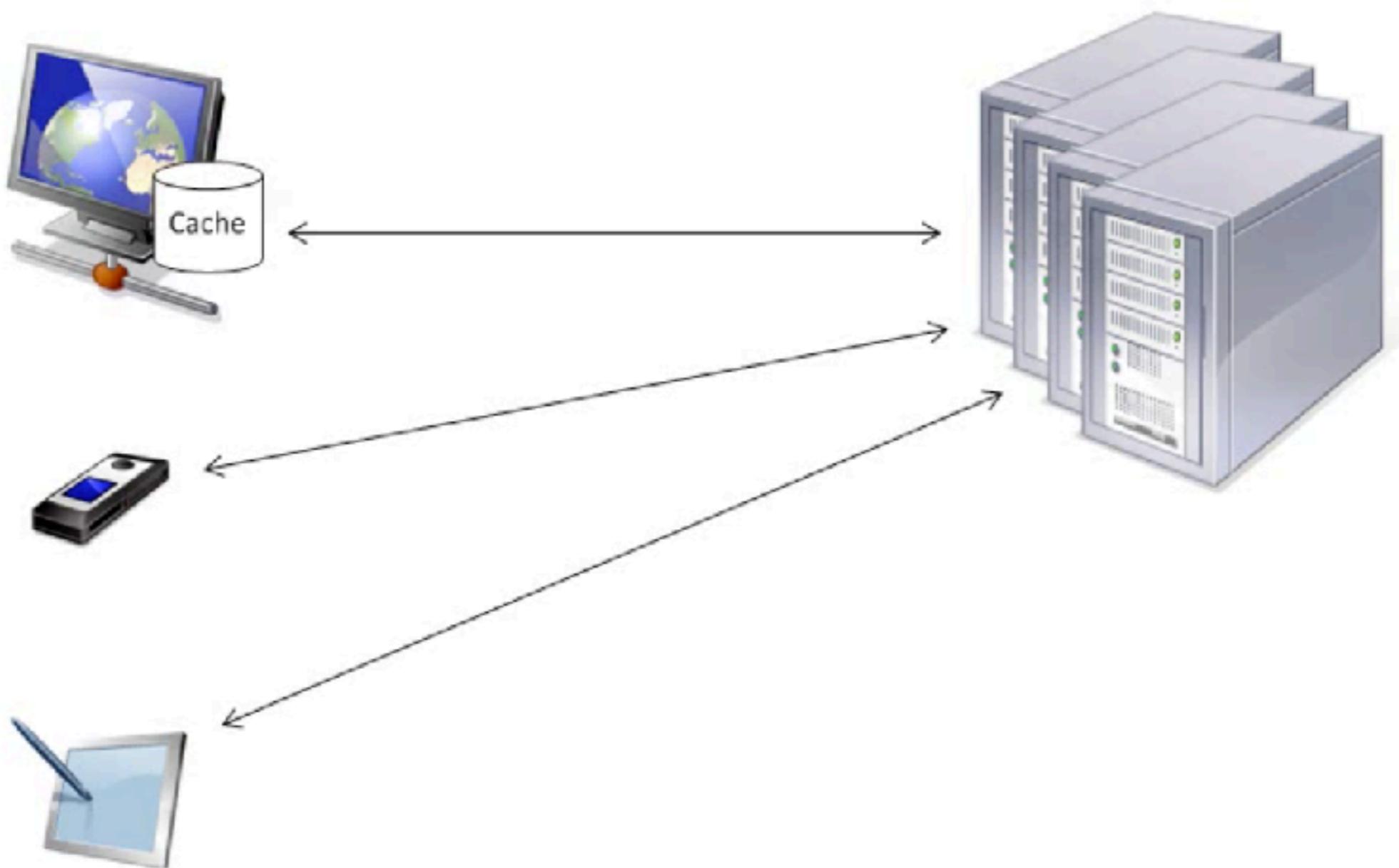
Cache



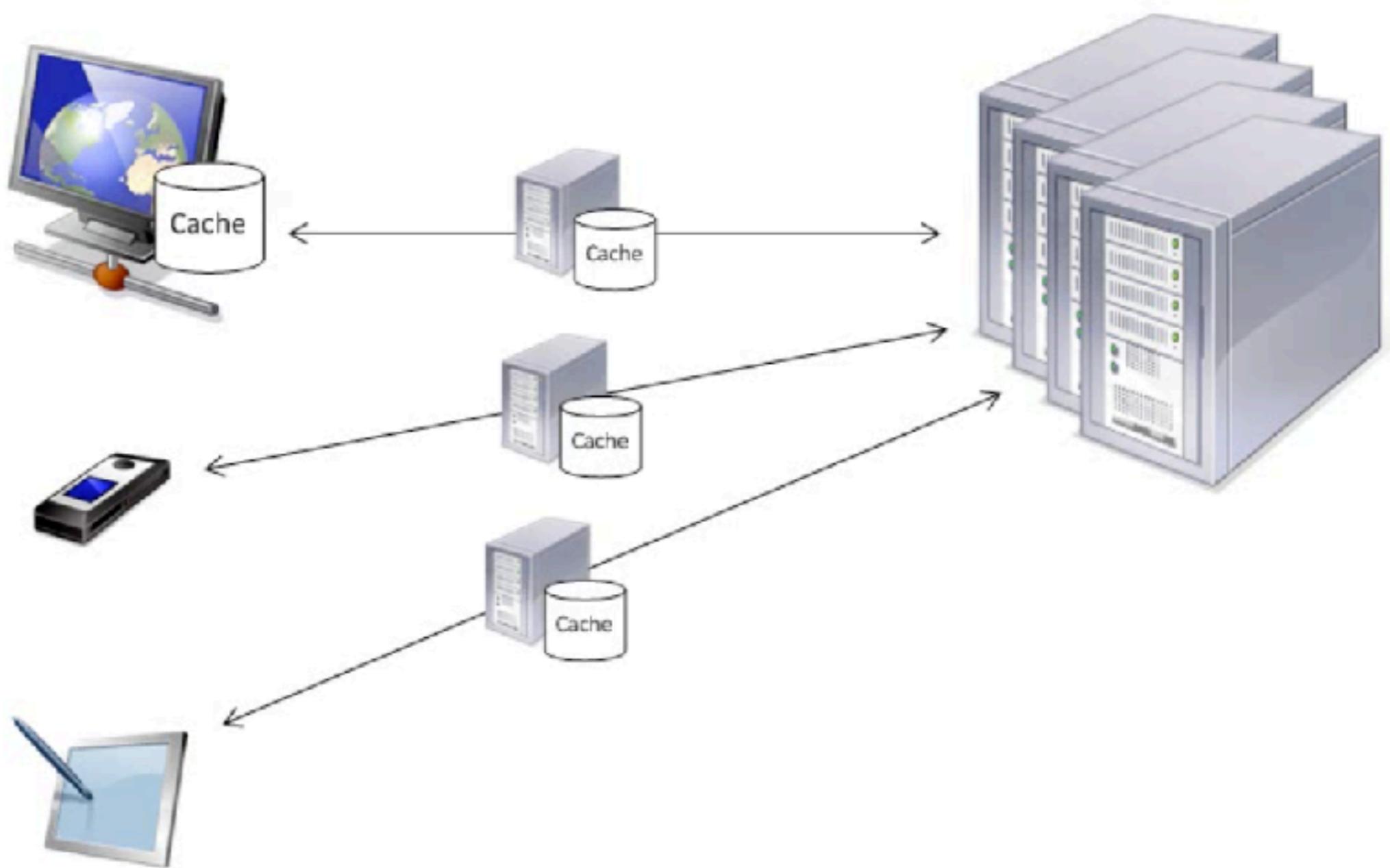
Cache



Cache



Cache



Concerns

Latency

Bandwidth

Transport cost



Benefits

Efficiency

Scalability

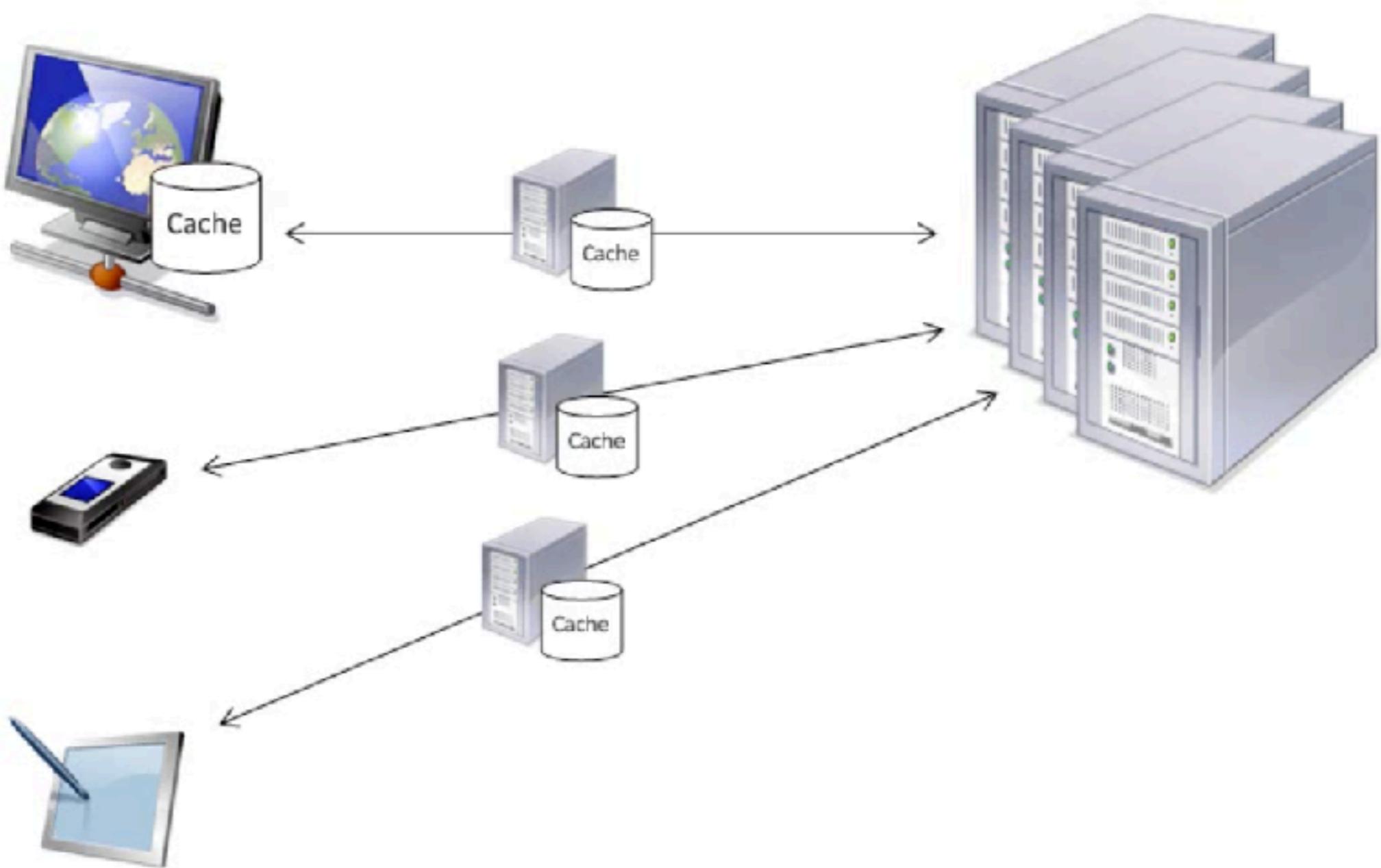
Performance



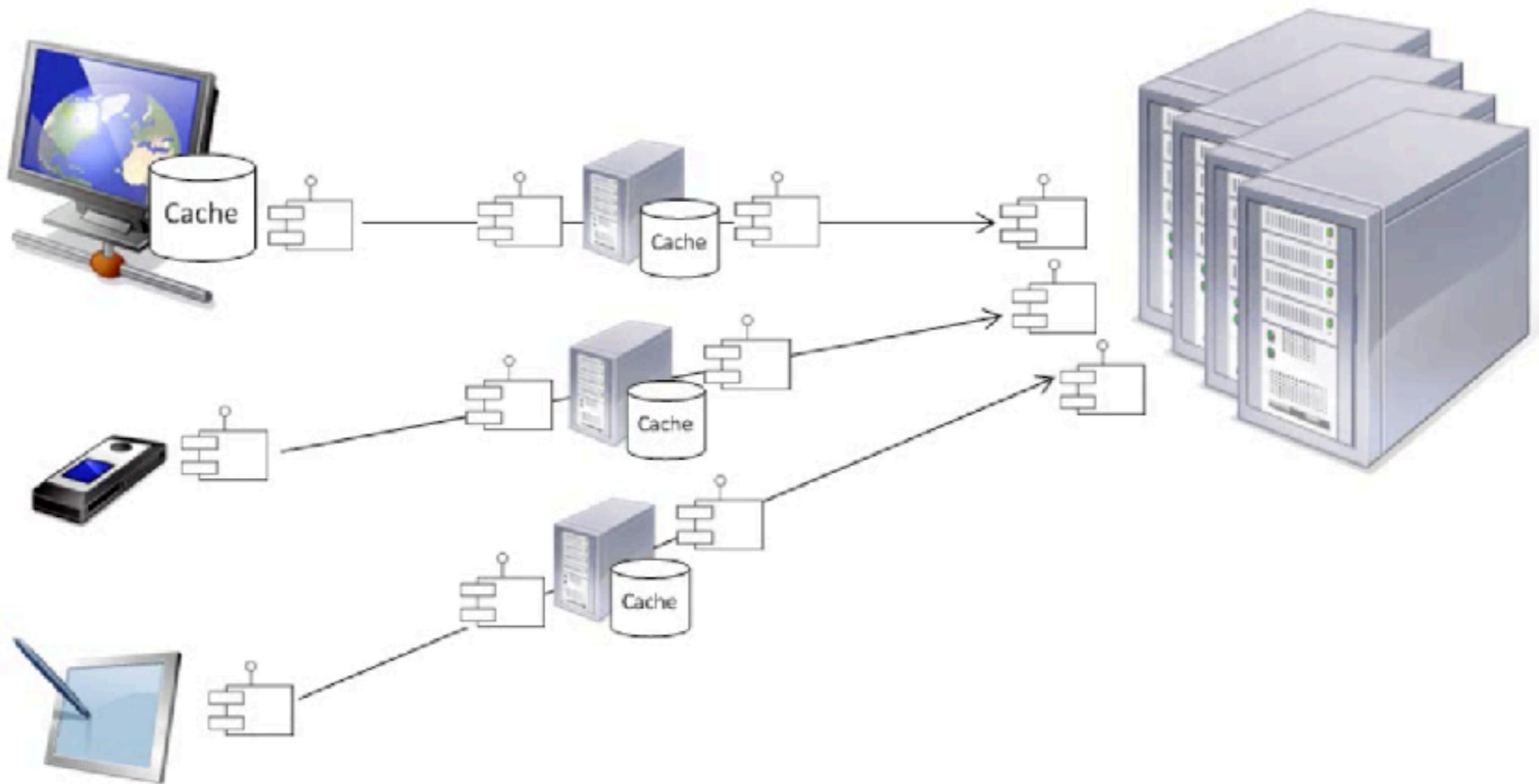
The Uniform Interface



The Uniform Interface



The Uniform Interface



Elements of the Uniform interface

Identification of resources

Manipulation through representations

Self-descriptive messages

Hypermedia as the engine of app state



Concerns

Network reliability

Network topology

Administration

Complexity

Heterogeneous network



Benefits

Visibility

Evolvability

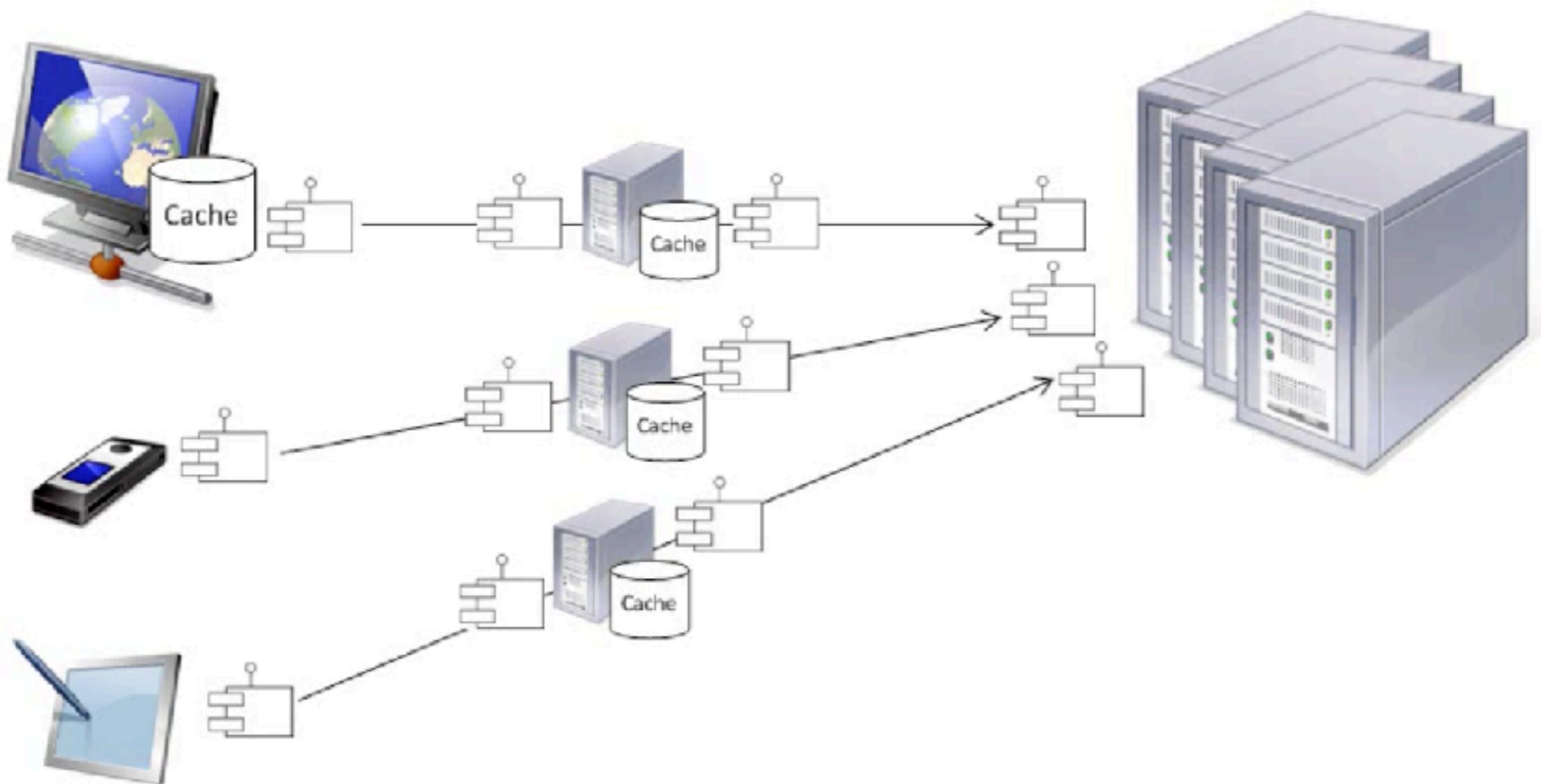
Performance



Layered system



Layered system



Concerns

Network topology

Complexity

Security



Benefits

Scalability

Manageability

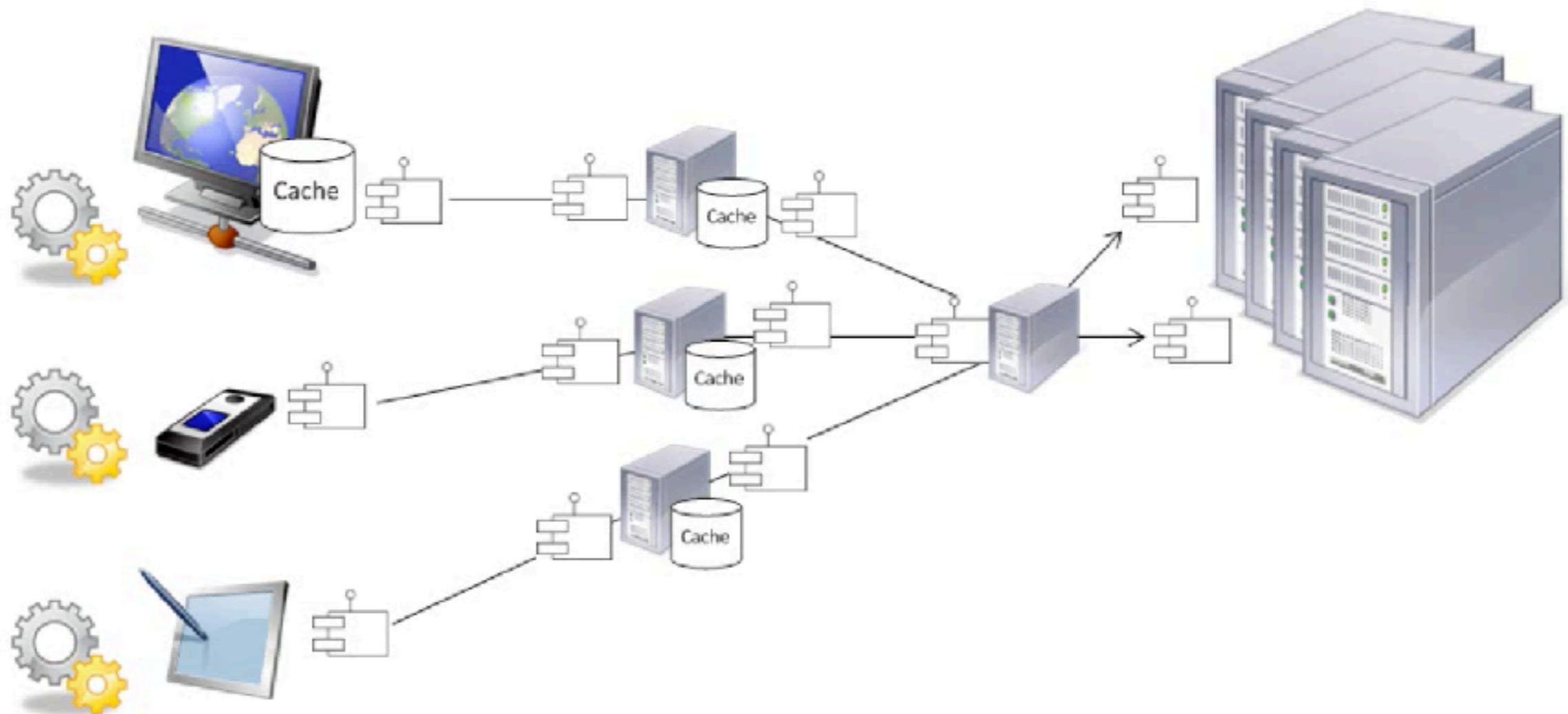
Performance



Code-on-demand (optional)



Code-on-demand



Code-on-demand

Help to manage complexity

The trade-off is visibility

