Quick and dirty Intro to LDP in Fedora 4

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Trees everywhere: Resource and the RESOURCE PATH

HTTP://SOMEHOST:SOMEPORT/REST/GRANDPA/DAD/ME/

Fact: our data is referenced and kept in a **tree**

PATHS describe hierarchies.

- Resources use **PATHS** as **identifiers**
- **PATHS** denote also an access location (URI) when using our Fedora 4 REST endpoint

Types of Resources in Fedora 4

Resource types (rdf:type) a.k.a "classes"

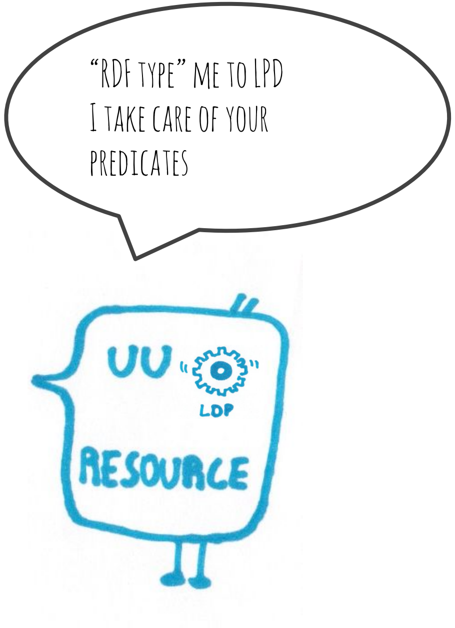
	Base	by Content	LDP	User Semantics
 </MYGRANDPA/MYDAD/ME>	a Fedora:Resource	a Fedora:Binary	a ldp:NonRDFSource	
		a Fedora:Container	a ldp:RDFSource a ldp:Container (a dp:IndirectContainer OR a ldp:DirectContainer)	a schema:Book (or whatever)

LDP: Linked Data Platform

RDF is complex: let's make it easier

LPD provides a WEB based architecture for reading and writing Linked Data.

- F4 implements **LDP** (that is the reason we can access our resources via our **PATHS**/URIS and do Stuff on them)
- Aids in resource discovery (follow your nose approach)
- Resources are understood as **Containers**
- Those can "Magically" manage triples between resources: they provide a **service**
- **LDP** Containment = rigid/strong parent child relationship (like putting something in a box)

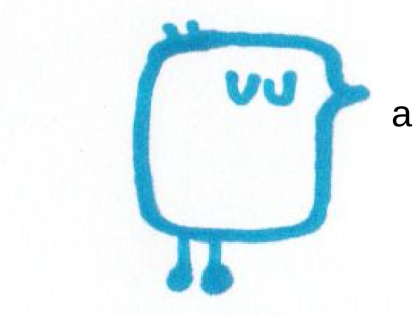


LDP Container (Or Basic Container)

<> a yummy:Banana ;
dc11:title “Extra Creamy” .

</REST/FRUITS/BANANAS/>

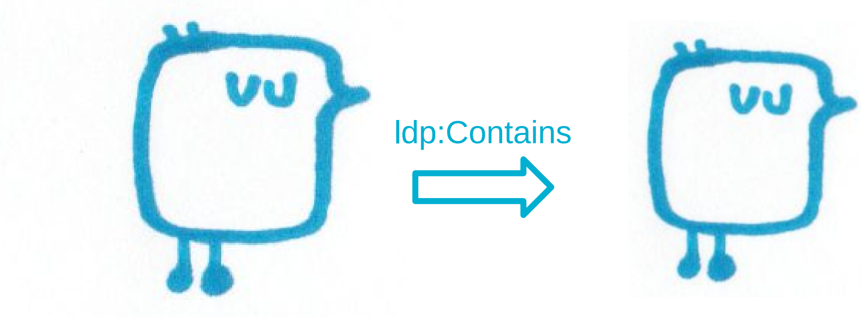
HTTP POST “/rest/fruits/bananas/” with Slug = “greenbanana”



a ldp:Container ;

LDP Container (Or Basic Container)

</REST/FRUITS/BANANAS/> </REST/FRUITS/BANANAS/GREENBANANA>



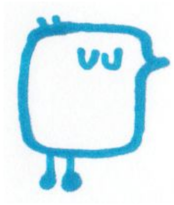
LDP added a relation from </rest/fruits/bananas/> to new </rest/fruits/bananas/greenbanana/>

Consequences:

- default Tree builder
- Property becomes Server Managed:

if we remove “greenbanana”, triple </REST/FRUITS/BANANAS/> ldp:contains </REST/FRUITS/BANANAS/GREENBANANA> gets also removed

LDP Direct Container



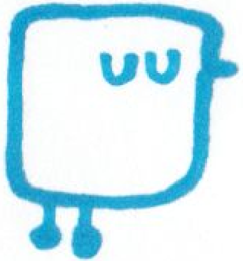
<> a yummy:Apple ;
dc11:title “Extra Juicy” .

```
HTTP POST “/rest/fruits/apples/” with Slug = “redapple”
```

⟨/REST/FRUITS/APPLES/⟩

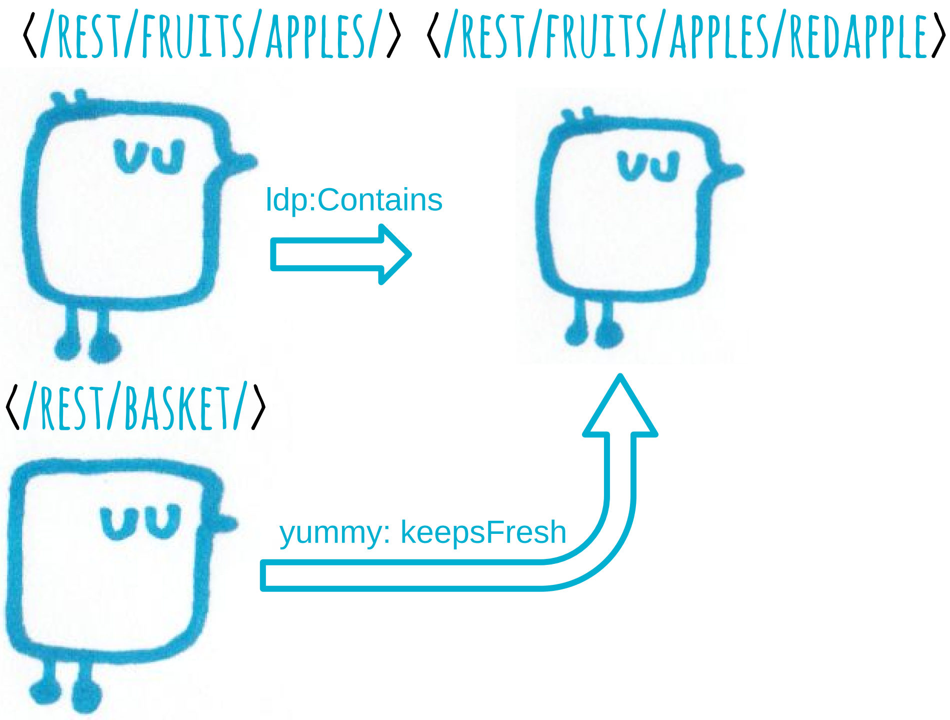
a ldp:DirectContainer ;
ldp:membershipResource ⟨/REST/BASKET/⟩ ;
ldp:hasMemberRelation yummy:keepsFresh .

⟨/REST/BASKET/⟩



a ldp:Container

LDP Direct Container



⟨/REST/FRUITS/APPLES/⟩ ⟨/REST/FRUITS/APPLES/REDAPPLE⟩

ldp:Contains

⟨/REST/BASKET/⟩

yummy: keepsFresh

LDP added a relation from </rest/basket/> to new </rest/fruits/apples/redapple/>

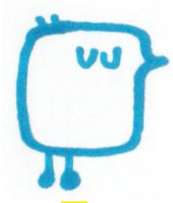
Consequences:

- Breaks the default Tree concept
- Property becomes Server Managed:

if we remove “redapple”, triple ⟨/REST/BASKET/⟩ yummy: keepsFresh ⟨/REST/FRUITS/APPLES/REDAPPLE⟩ gets also removed

Cool!

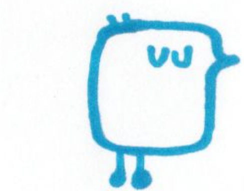
LDP Indirect Container



<> yummy:theBerry </REST/BLUEBERRYBUSH/BLUEBERRY01/> .

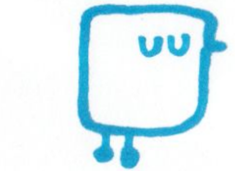
⟨/REST/FRUITS/BERRIES/⟩

`HTTP POST “/rest/fruits/berries/” with Slug = “firstBerry”`



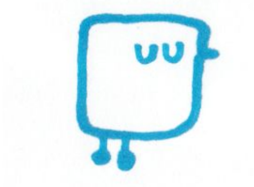
a ldp:IndirectContainer ;
ldp:membershipResource ⟨/REST/BASKET/⟩ ;
ldp:hasMemberRelation yummy:keepsFresh ;
ldp:insertedContentRelation yummy:theBerry .

⟨/REST/BASKET/⟩



a ldp:Container

⟨/REST/BLUEBERRYBUSH/BLUEBERRY01/⟩



a ldp:Container,
yummy:Blueberry ;

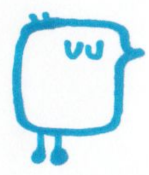
LDP Indirect Container

LDP added a relation from
</rest/basket/> to new
</rest/blueberrybush/blueberry01/>

</REST/FRUITS/BERRIES/FIRSTBERRY/>

Consequences å

ldp:Contains



yummy: keepsFresh

LDP helps building relations
(think of self-deposit aid)

What other services does F4 provide for my Resources?

F4 Services

Fedora 4 is build to last

- Restful API on Resource URIs (Paths) (Create/Read/Update/Delete) = LDP
- Tombstones (Deleted resources keep their PATHS)
- Versioning (/fcr:versions) and Memento to come
- Authorization - WebACL
- Atomic Batch Operations = TX (start/do stuff -> commit/rollback?)
- Fixity (/fcr:fixity) on NonRDFSource

If i ask Fedora 4 (REST API) for a Resource, do i get the whole Graph tree up? No =(.

We get only the referenced Resource