Unlocking services on z/TPF

SOA Subcommittee

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IBM **z/TPF**
April 11, 2016

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5 Minutes	**REST**
5 Minutes	**TPF native services**
10 Minutes	**z/TPF REST interface**
5 Minutes	**Q&A**

What is REST?

- Representational State Transfer
- Better performing interface than SOAP
- Typically implemented using HTTP
- Not language dependent
- Well known by recent college grads

REST example

POST http://mytpf/loader/oldr

loads from DDN “oldr”

response provides list of loadsets loaded(LSET1,LSET2,etc)

PUT http://mytpf/loader/LSET1?action=act

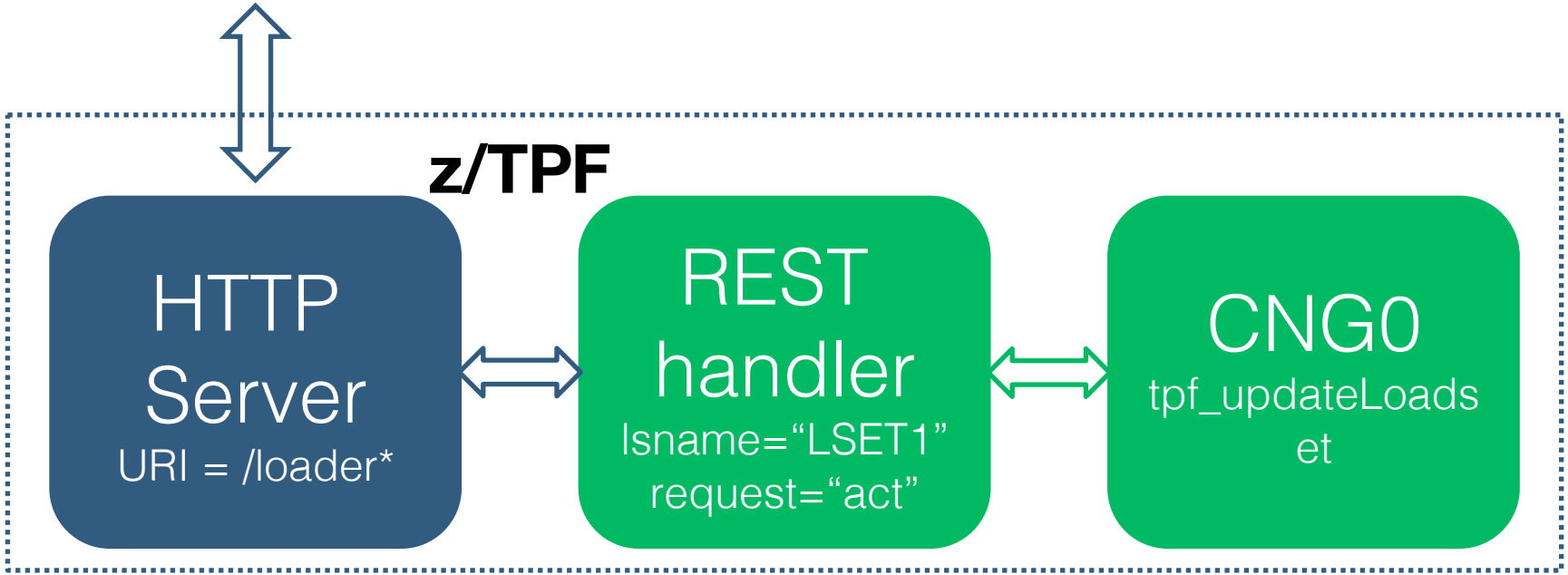
activates loadset LSET1

GET http://mytpf/loader/LSET1

response provides activation status and contents of LSET1

REST example

PUT http://mytpf/loader/LSET1?action=act



Components for REST request

- URI
- method
  - POST (Create)
  - GET (Read / Query)
  - PUT (Update)
  - DELETE (Delete)
- headers
- body (JSON,XML)

and then handle everything again for the HTTP response....

Implementing REST today requires management infrastructure and parsing.

So how can DFDL help?

XML/JSON serialization

tpf_doc_parseDocument

tpf_dfdl_serializeData

Typical Components of REST

- URI
- method
  - POST (Create)
  - GET (Read / Query)
  - PUT (Update)
  - DELETE (Delete)
- headers
- body (JSON,XML)

z/TPF can simplify the other aspects of the REST interface too

What if you just needed to code a single function and z/TPF handled the rest?

Code 1 function:

```
int tnsAPI(void *in,
           void **out);
```

and define the rest.

So how’d that work?

REST example

PUT http://mytpf/loader/LSET1?action=act

activates loadset LSET1

Code TPF native service API

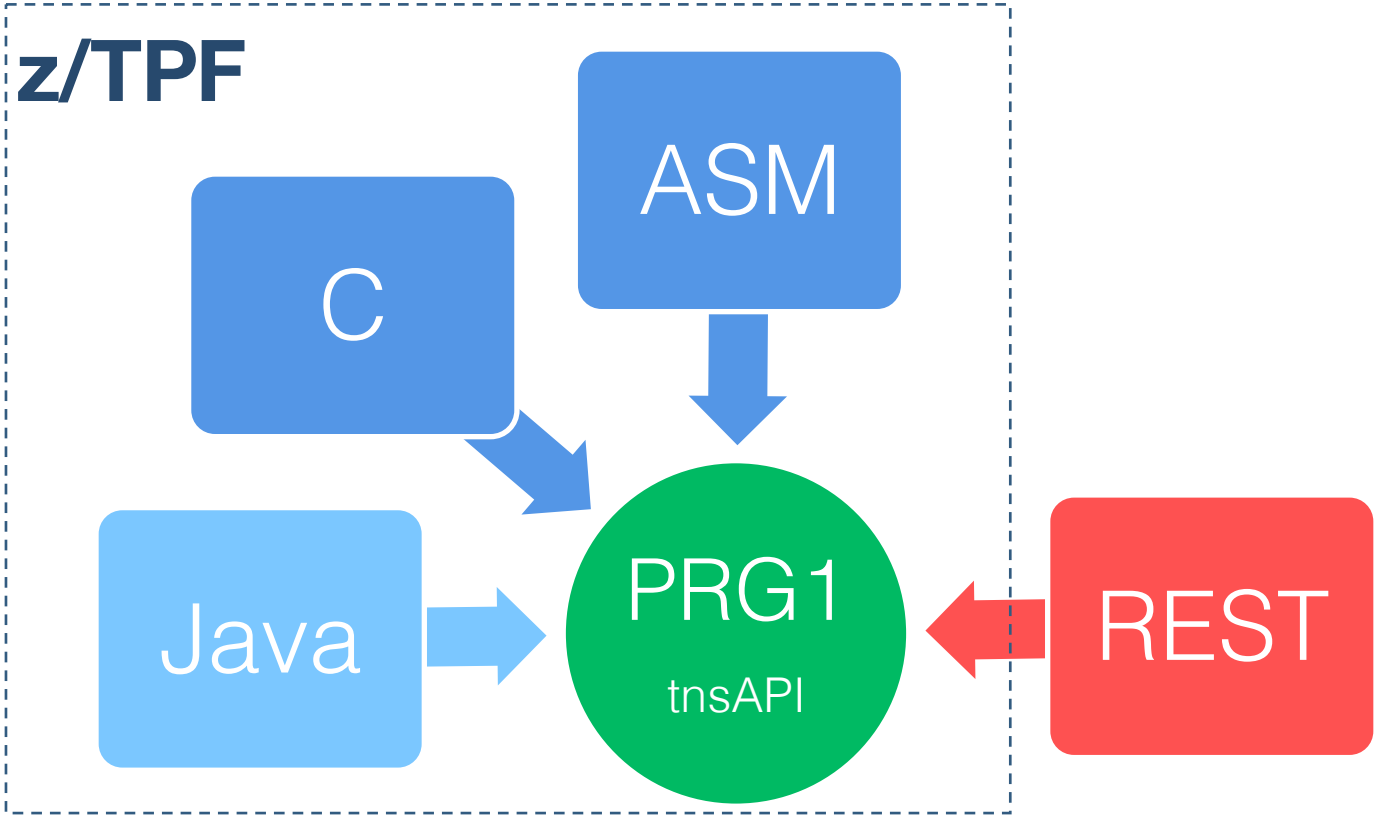
Update program CNG0

New file celtns.c, to contain the following function:

```
int tpf_updateLoadset(struct lsetinfo *in,  void **out);

struct lsetinfo {
   unsigned char lsname[8];
   unsigned char request[3];
};
```

TPF Native Service Integration

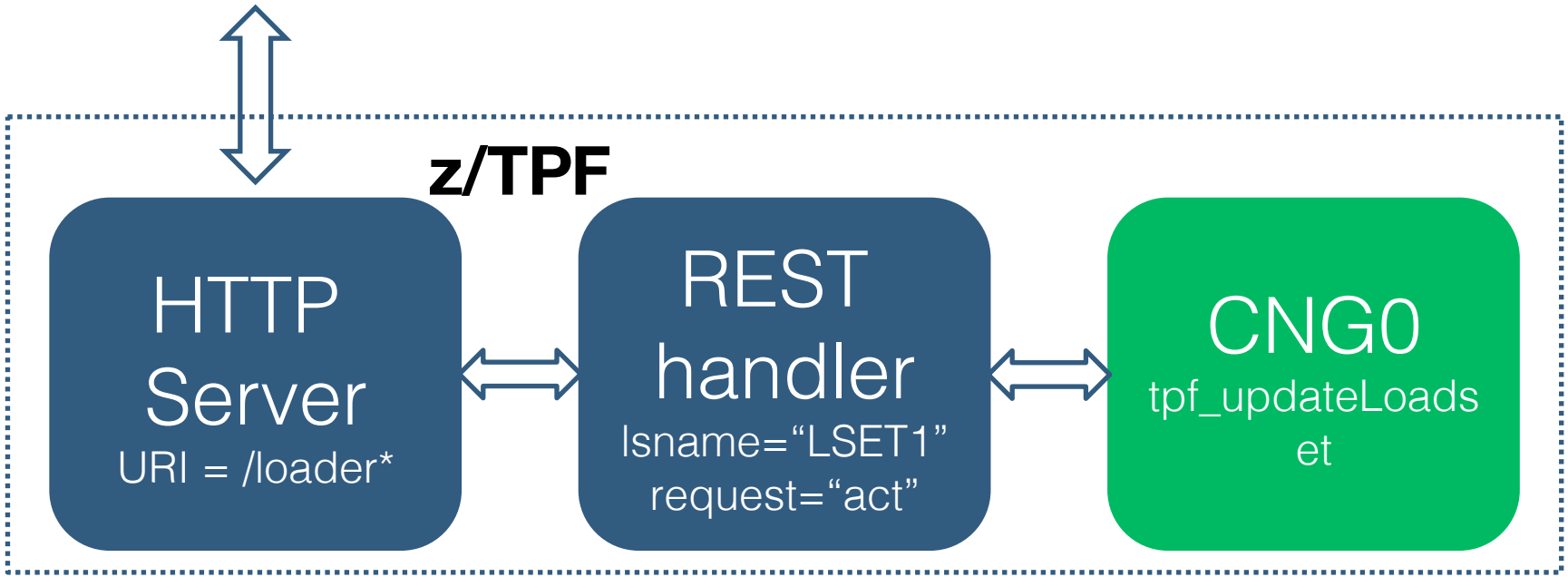


Configure z/TPF for REST

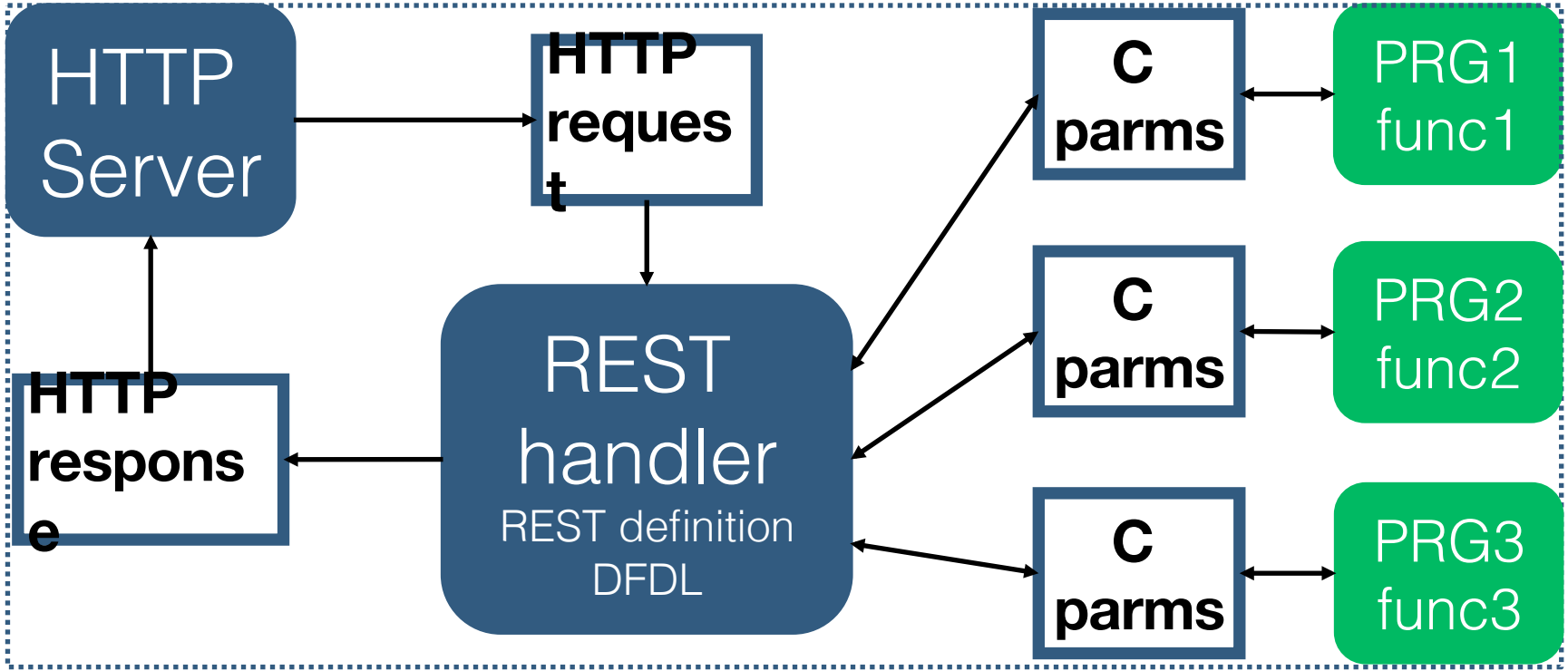
- Run **maketpf CNG0 celtns.o dfdl** to generate **lsetinfo.gen.dfdl.xsd** for lsetinfo struct.
- Define REST interface in file **loader.swag.json**.
- Load **CNG0**, **lsetinfo.gen.dfdl.xsd**, and **loader.swag.json** to z/TPF and deploy loader.swag.json through common deployment.
- Update z/TPF HTTP server URL-program mapping file to register the service.

REST example

PUT http://mytpf/loader/LSET1?action=act



REST infrastructure



z/TPF REST interface

- Provides centralized REST infrastructure for service definition and management.
- Exposes services via REST using configuration data instead of having to write a bunch of code, allowing faster deployment.
- Enables integration of services in a distributed system to allow the services to be called either remotely via REST or locally via Java.
- Allows for future enablement of other REST API services.

Thank you!

Questions or comments?

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