Experiment Control Tools for ORCA Control Framework

Anirban Mandal

## Renaissance Computing Institute (RENCI)

ORCA Actor Registry

- **Snapshot of available actors from various ORCA containers**
  - Users can use this for resource discovery and other queries

- **Two new properties need to be set during container startup to register new actors**
  - registry.url=http://geni.renci.org:19999
  - registry.method=registryService.insert

- **Registry contains information about actors - brokers, authorities (AM) and slice managers (SM)**
  - actor name, guid, type, description, public keys and certificates

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ORCA Actor Registry
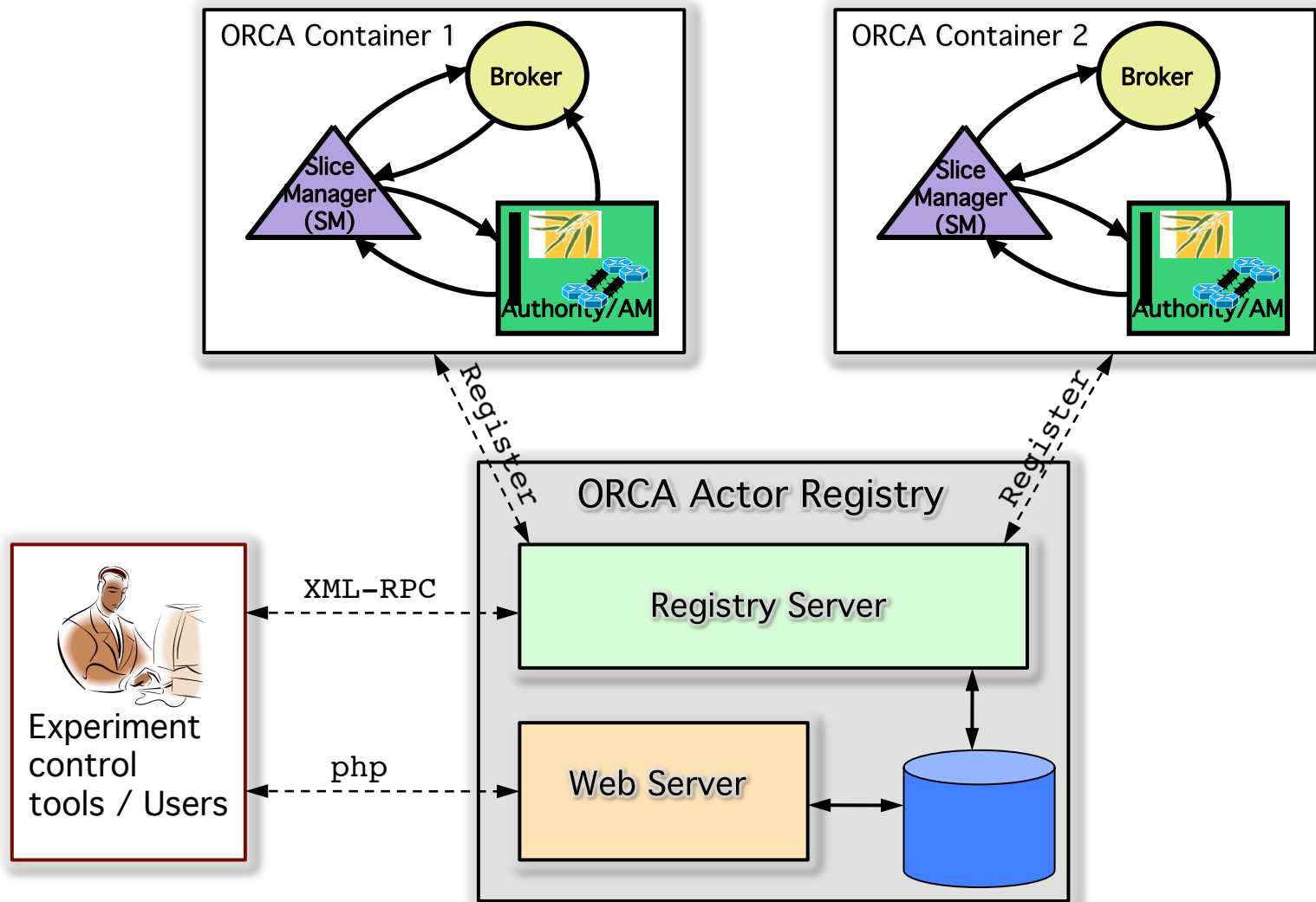
Actor Registry

- Users can visit http://geni.renci.org/actors.php to view current set of actors registered with the registry

- Users can also programmatically query the registry using an XML-RPC interface

```
String url = "http://geni.renci.org:19999/";
XmlRpcClient client = new XmlRpcClient(url);
Vector params = new Vector(); params.clear();
String result = (String) client.execute("registryService.getActors",
params);
```
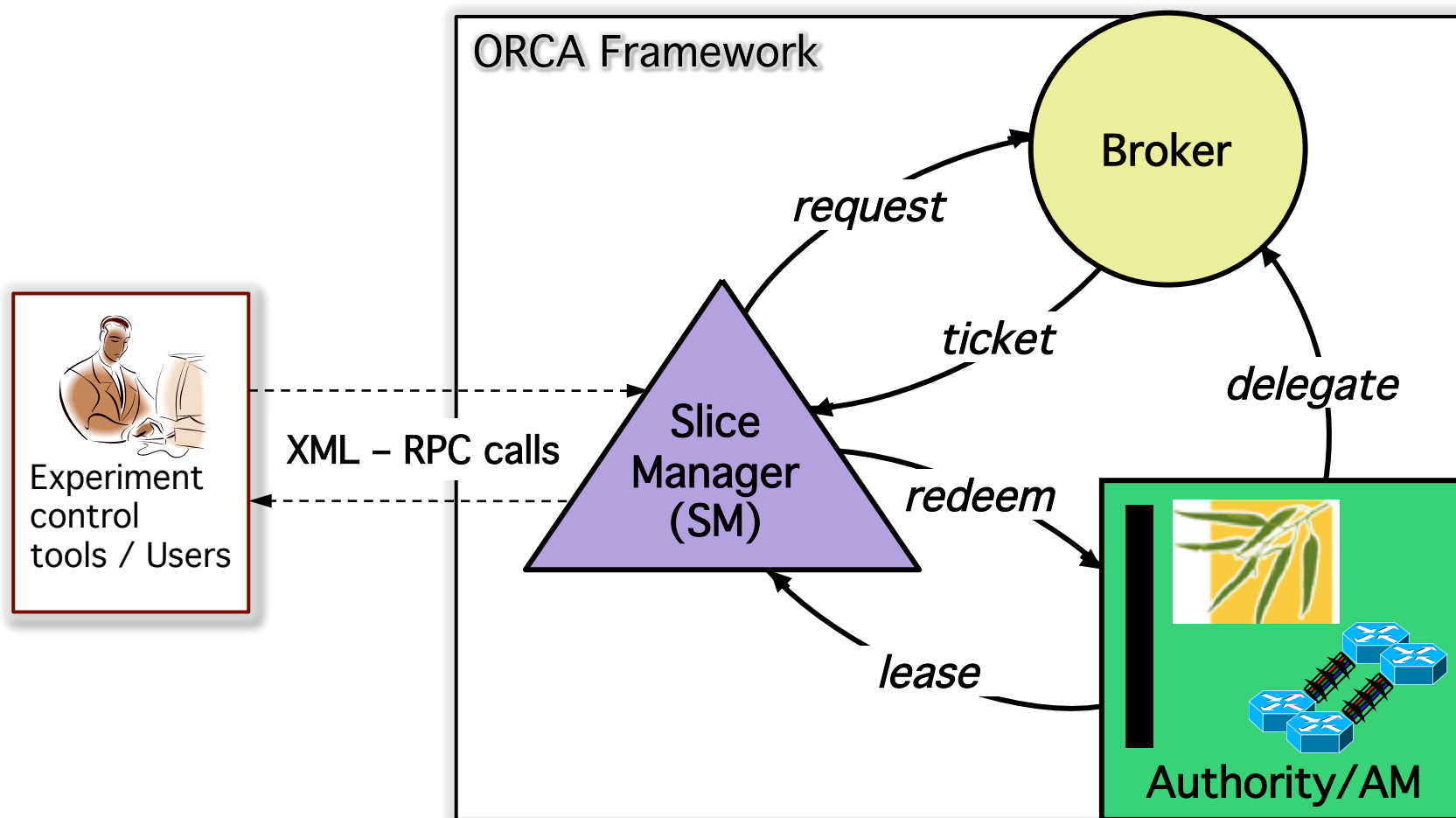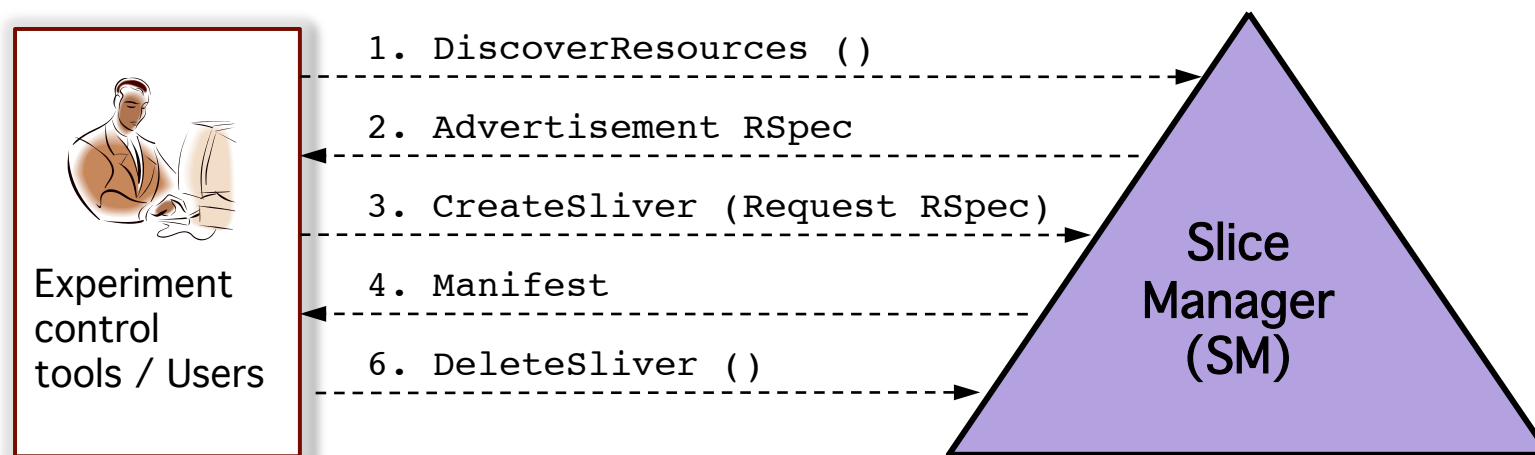
XML-RPC Controller

- Goal: Provide an XML-RPC interface to ORCA for experiment control tools and external users

- Tools/users would use this interface to
  - discover available resources
  - instantiate and destroy experiment slivers

- Initial version of ProtoGENI-like XML-RPC interface available on an ORCA SM

- Generic slice manager acts on behalf of experiment control tools/user

- Details of control framework hidden from user

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Overview

Interface Details

Experiment control tools / Users

1. DiscoverResources ()
2. Advertisement RSpec
3. CreateSliver (Request RSpec)
4. Manifest
6. DeleteSliver ()

Slice Manager (SM)

- **These interfaces provide a minimal set of features**
  - **DiscoverResources(), CreateSliver(), DeleteSliver()**
- **Extended set of features (available later) would include**
  - **GetTicket(), RedeemTicket(), UpdateTicket(), UpdateSliver()**
  - **Add support for resource representation using NDL**

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