

OnTimeMeasure Integration with Flack

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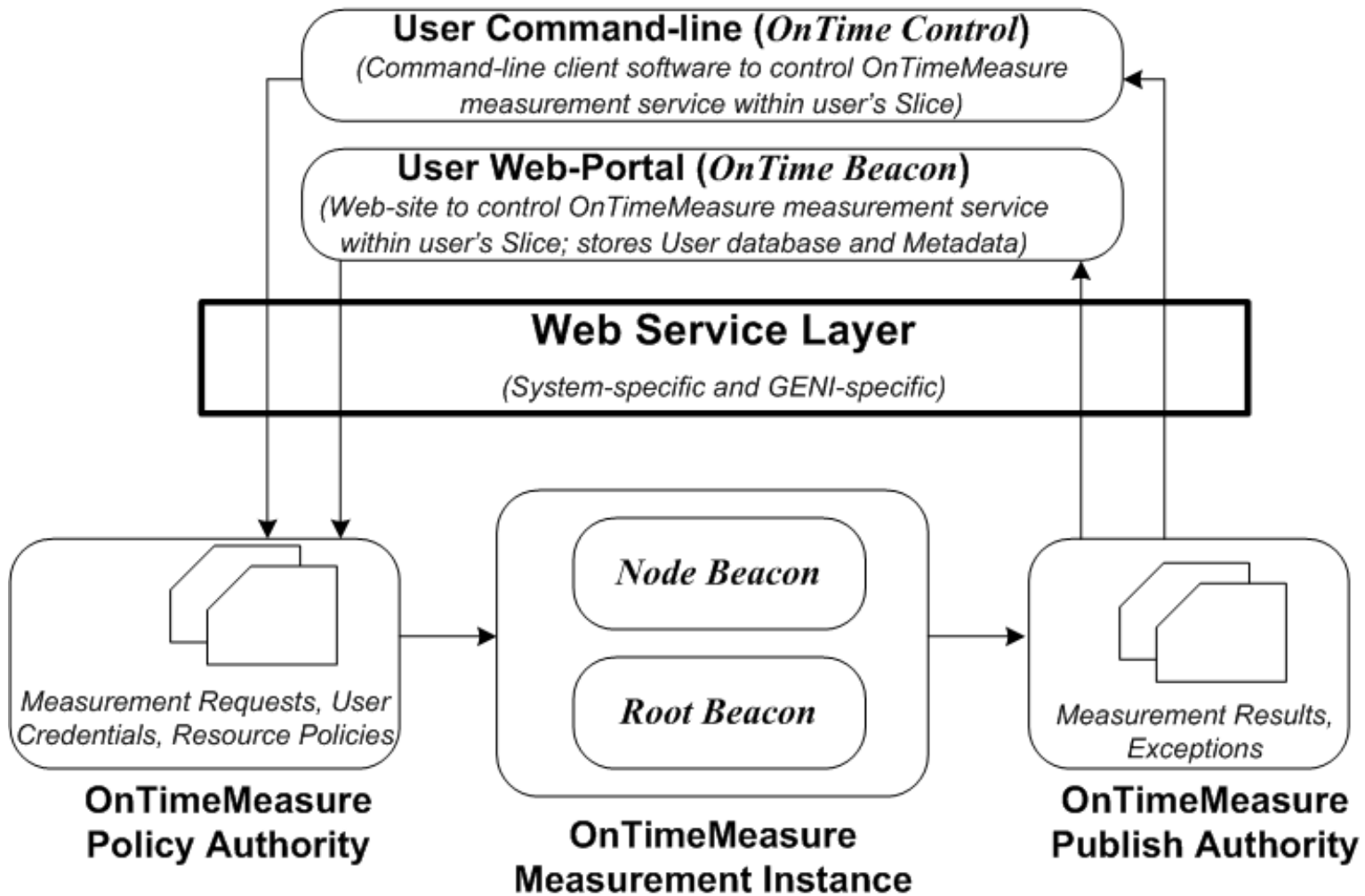
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Prototype Design for Discussion
Last Updated: February 2012

Topics of Discussion

- OnTimeMeasure Overview
- Slice I&M Process
- Integration Motivations
- Integration Use Cases
- INSTOOLS-Flack Code Review Findings
- Discussion

OnTimeMeasure Architecture



OnTimeMeasure Slice I&M Steps

Step-1: *Setup/Instrumentize* – Experimenter installs measurement scripts on desired nodes in slice

Step-2: *Configuration* – Measurements to be collected in the slice are configured

Step-3: *Control* – Measurement service is started, stopped and re-started as needed

Step-4: *Query* – Measurement results in the slice are queried, graphed and analyzed

Integration Motivations

- Steps 1-3 are currently manual in OnTimeMeasure and can be automated with Flack integration
 - We are already able to automate the OnTimeMeasure installation process using the ‘Install’ and ‘Execute’ Services in Flack***
 - OnTimeMeasure users will later have the option to use a “separate” Flack plugin for active or custom-metric measurements and could avoid some of the current manual steps
- INSTOOLS “plugin” within Flack is a reference design, and is also one of the integration points of OnTimeMeasure within GENI
 - INSTOOLS provides passive measurements in a slice, OnTimeMeasure integration enables active, and custom-metric measurements
 - Results and graphs of OnTimeMeasure become accessible through INSTOOLS web-interface “Out-of-the-box”
 - Currently, manual configuration within INSTOOLS web-portal needed to display measurement graphs of OnTimeMeasure***

***Reference: <http://groups.geni.net/geni/wiki/OnTimeMeasureTutorial>

Flack support for Plugins

PC-0

Manager:

Binding: Unbound Bound to

Sliver Type: Exclusive?

Disk Image:

Select image above, paste URN, or manually type OSID

Install:

INSTALL

EXECUTE

using

OTCDemo

plugins tab

Import

INSTOOLS

Read Tutorial

Instrumentize

APIv 1

Raw MCs Virtual MCs

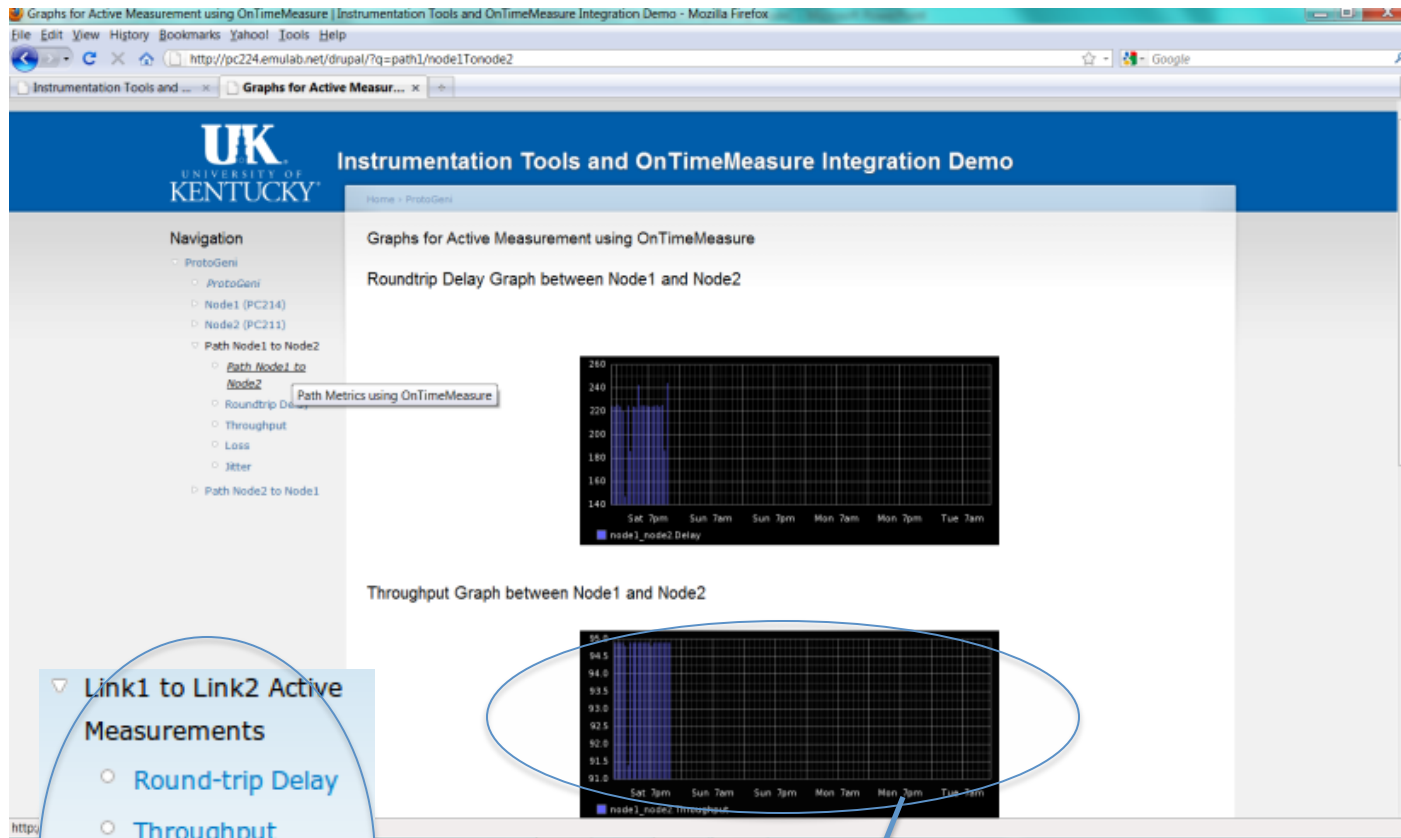
Go to portal

ROOT pc355.emulab.net:22
excl. raw-pc
FEDORA8-64-OVZ-UPD

NODE1 pc337.emulab.net:22
excl. raw-pc
UBUNTU10-STD

NODE2 pc262.emulab.net:22
excl. raw-pc
UBUNTU10-STD

INSTOOLS Web-portal Integration

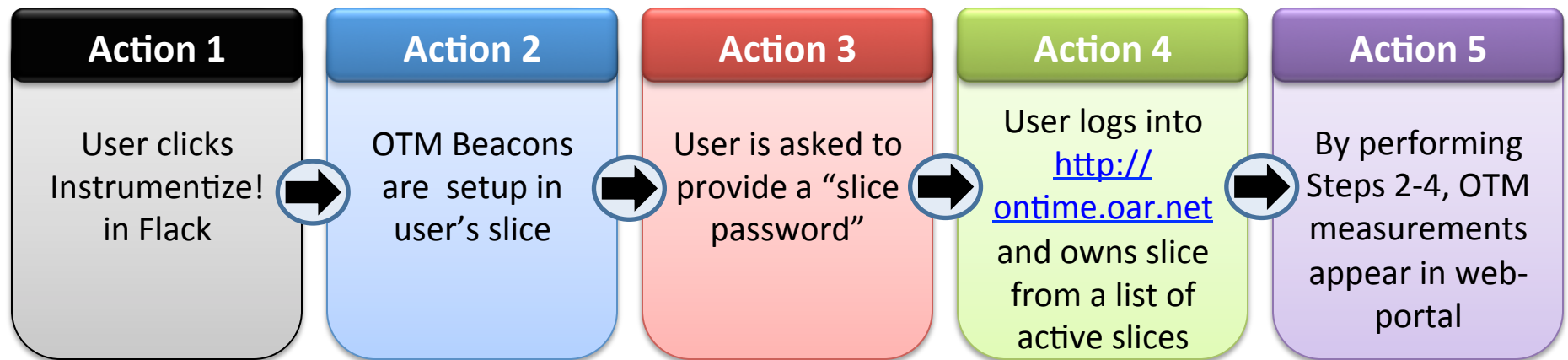


OnTimeMeasure
Menus and Graphs

Integration Use Cases

- Integration could serve 2 broad I&M use cases
 - On-Going I&M → out-of-the-box without any manual steps
 - Continuously publish active measurements along with passive measurements in OnTimeMeasure or INSTOOLS web-portal
 - Separate MC or use MC of INSTOOLS for Root Beacon
 - “Go to Portal” could go to OnTimeMeasure web-portal if INSTOOLS is not part of the slice I&M
 - On-Demand I&M → automated Step 1, whereas manual Steps 2, 3 and 4 for more experimenter I&M control
 - Experimenter interacts with OnTimeControl (command-line tool) and OnTimeBeacon (researcher web-portal) for Steps 2, 3 and 4
 - After Step 1, OnTimeMeasure is aware of the new instrumentized slice
 - Experimenter will be able to use “slice password” provided during Step 1 for “owning” the slice and for performing Steps 2, 3 and 4 using OnTimeBeacon

On-Demand I&M Actions



INSTOOLS – Flack Code Review Findings

```
elsif($GENI_VERSION eq "2.0") {  
    $GENI_METHODS = {  
        "AddMCNode"      => \&Instools_dev::AddMCNode,  
        "Instrumentize"  => \&Instools_dev::Instrumentize,  
        "deInstrumentize" => \&Instools_dev::deInstrumentize,  
        "getInstoolsStatus" => \&Instools_dev::getInstoolsStatus,  
        "SaveManifest"  => \&Instools_dev::SaveManifest,  
        "GetINSTOOLSVersion" => \&Instools_dev::GetINSTOOLSVersion,  
    };  
}
```

- We plan to re-use INSTOOLS methods similar to ones shown above
 - Working with new INSTOOLS code
 - Working with latest Flack v2 code with Plugin support
- Server side scripts of plugin need more attention and cross-checking with ProtoGENI team) during development
 - Flack client plugin scripts generally are not an issue for stable functionality

INSTOOLS – Flack Code Review Findings

```
if (! (defined($credentials) && defined($urn) && defined($instools_version))
{
    return GeniResponse->MalformedArgsResponse("Missing arguments");
}
if(!is_valid_version($instools_version))
{
    return GeniResponse->MalformedArgsResponse("Incorrect INSTOOLS Version")
}

if (!isPasswd_Valid($password))
{
    return GeniResponse->MalformedArgsResponse("Password should be a min of
```

- We plan to re-use authentication methods already handled by INSTOOLS to gain access to the user's slice

Thank you for your attention ! 😊

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