What's underneath?

Condor and Metronome (aka NMI)

Marian ZUREK

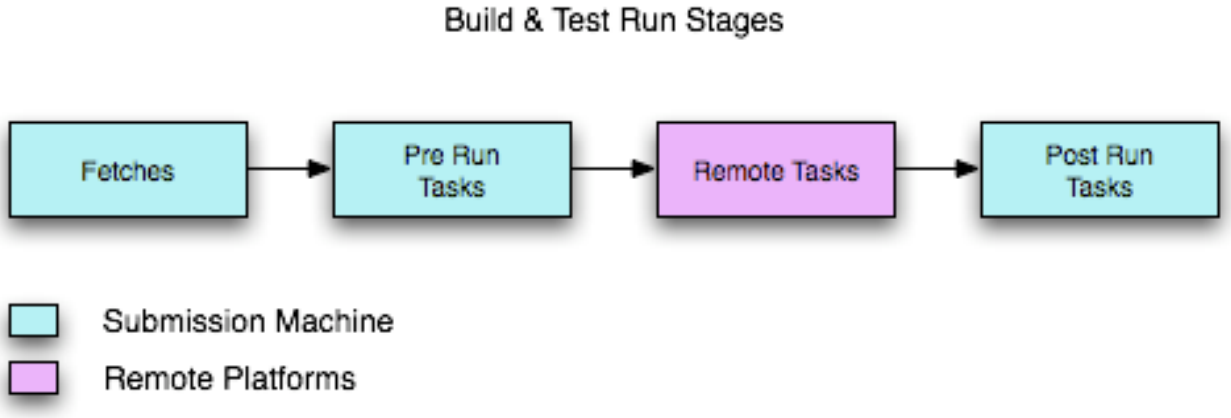
Agenda

- Motivation
- HelloWorld example 1
- HelloWorld example 2
- Some NMI variables
- Targeting the IPv6 resources
- Q & A

What is Condor and NMI

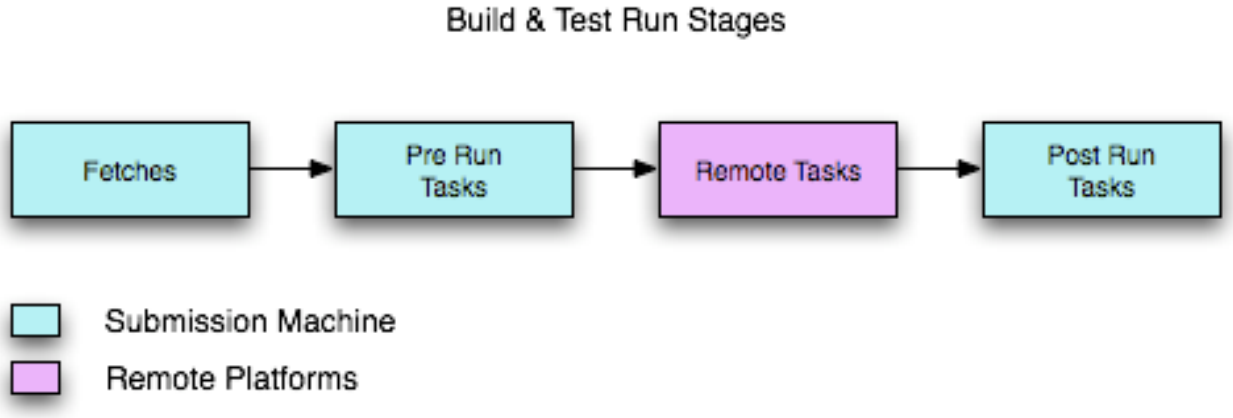
- Condor is offering mechanisms and policies that support High Throughput Computing (HTC) on large collections of distributed computing resources
- Matronome/NMI is a multi-platform facility designed to provide (automated) software building and testing services for a variety of (grid) computing projects.
- NMI is a layer on the top of Condor to abstract the typical complexity of the Build and Test process

NMI flow



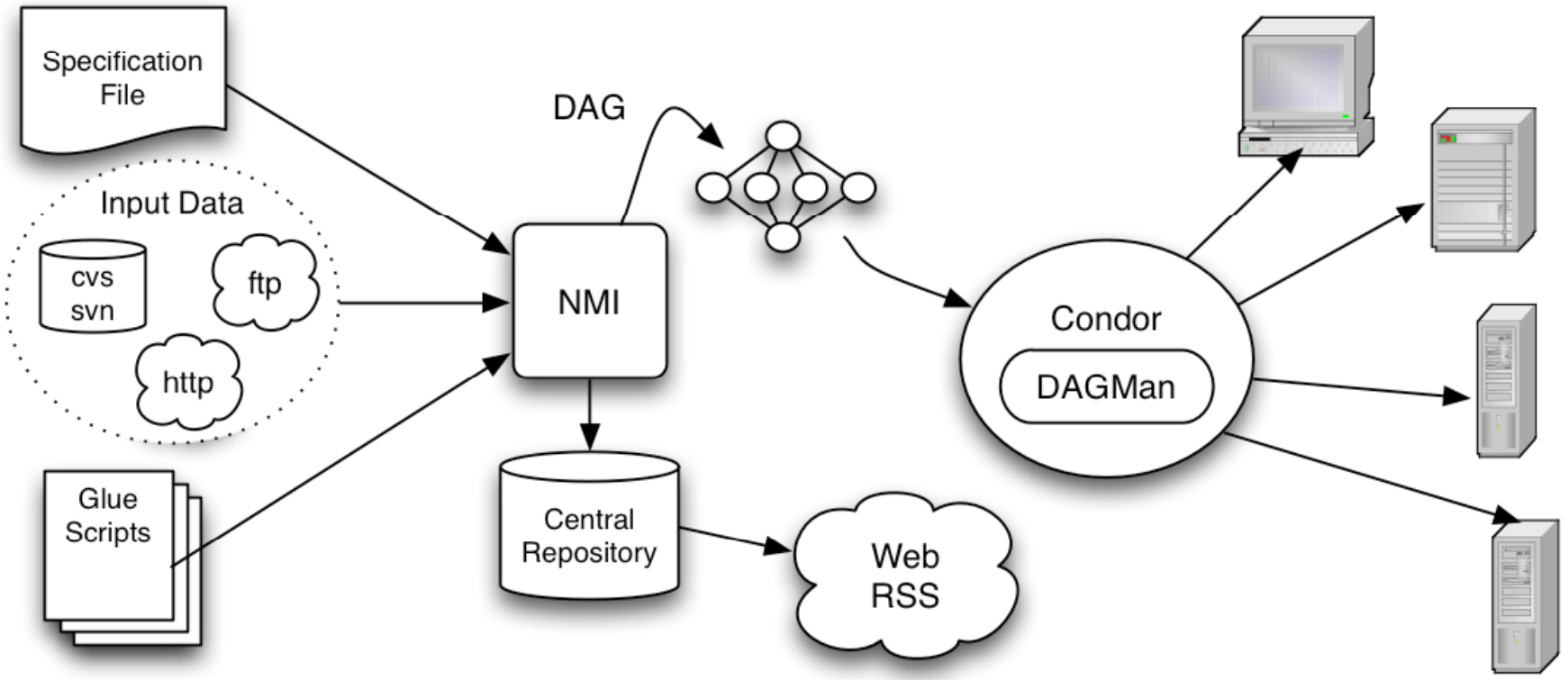
- **Fetch Tasks** - Retrieves needed software inputs from one or more sources to the submission machine.
- **Pre Run Tasks** - Lightweight tasks to be performed on the submission machine in order to prepare the software for staging to the remote platforms. These tasks can be global to all platforms (and thus executed only once, on the common input data) or specific to each platform (and thus executed once per platform, on its specific copy of the input data).

NMI flow

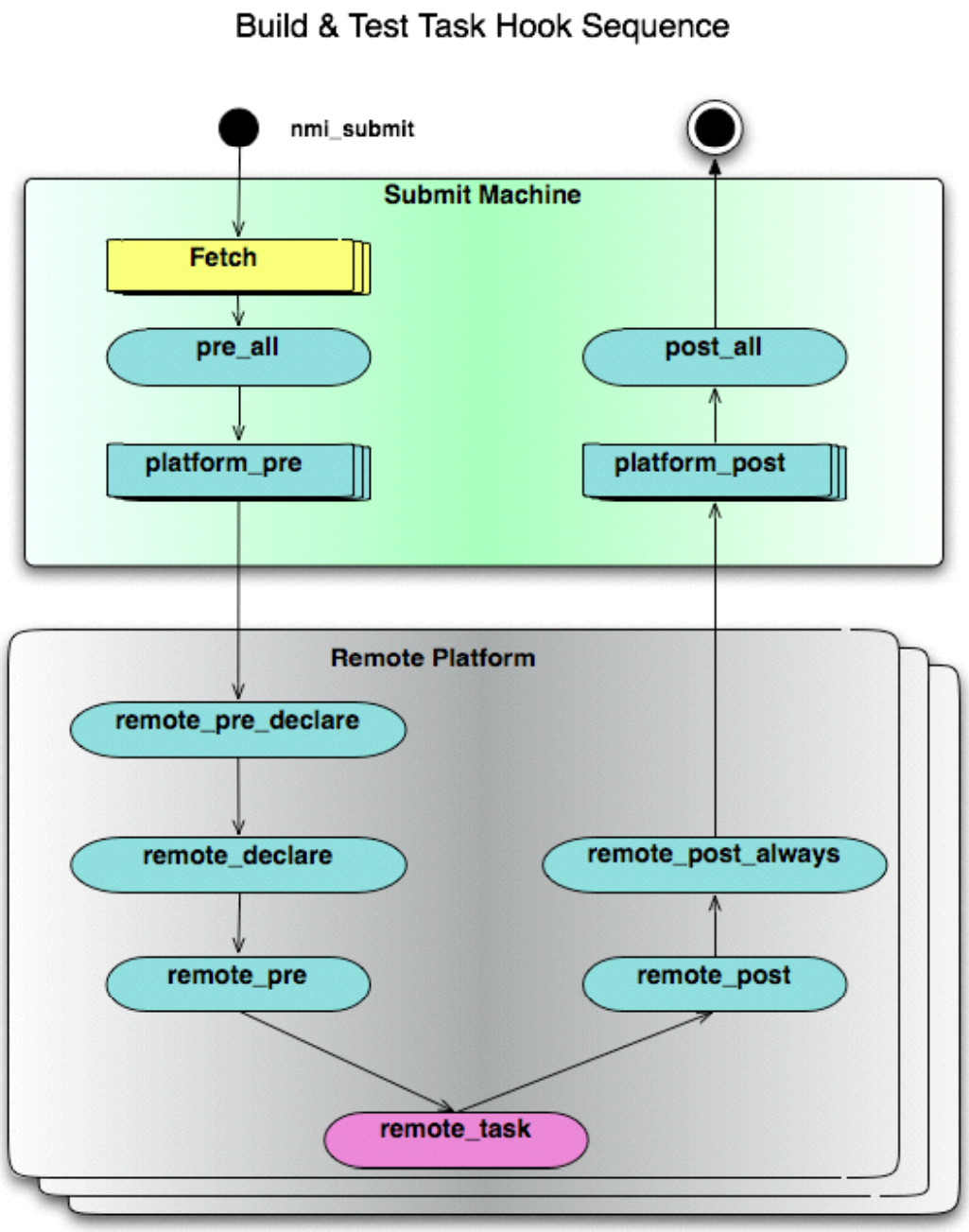


-
- **Remote Tasks** - Tasks to be performed on each remote platform.
-
- **Post Run Tasks** - Lightweight tasks to be performed on the submission machine to manipulate the results of the remote tasks. These tasks can be specific to each platform (and thus executed once per platform, on its specific results), or global to all platforms (and thus executed only once, on the combined output).

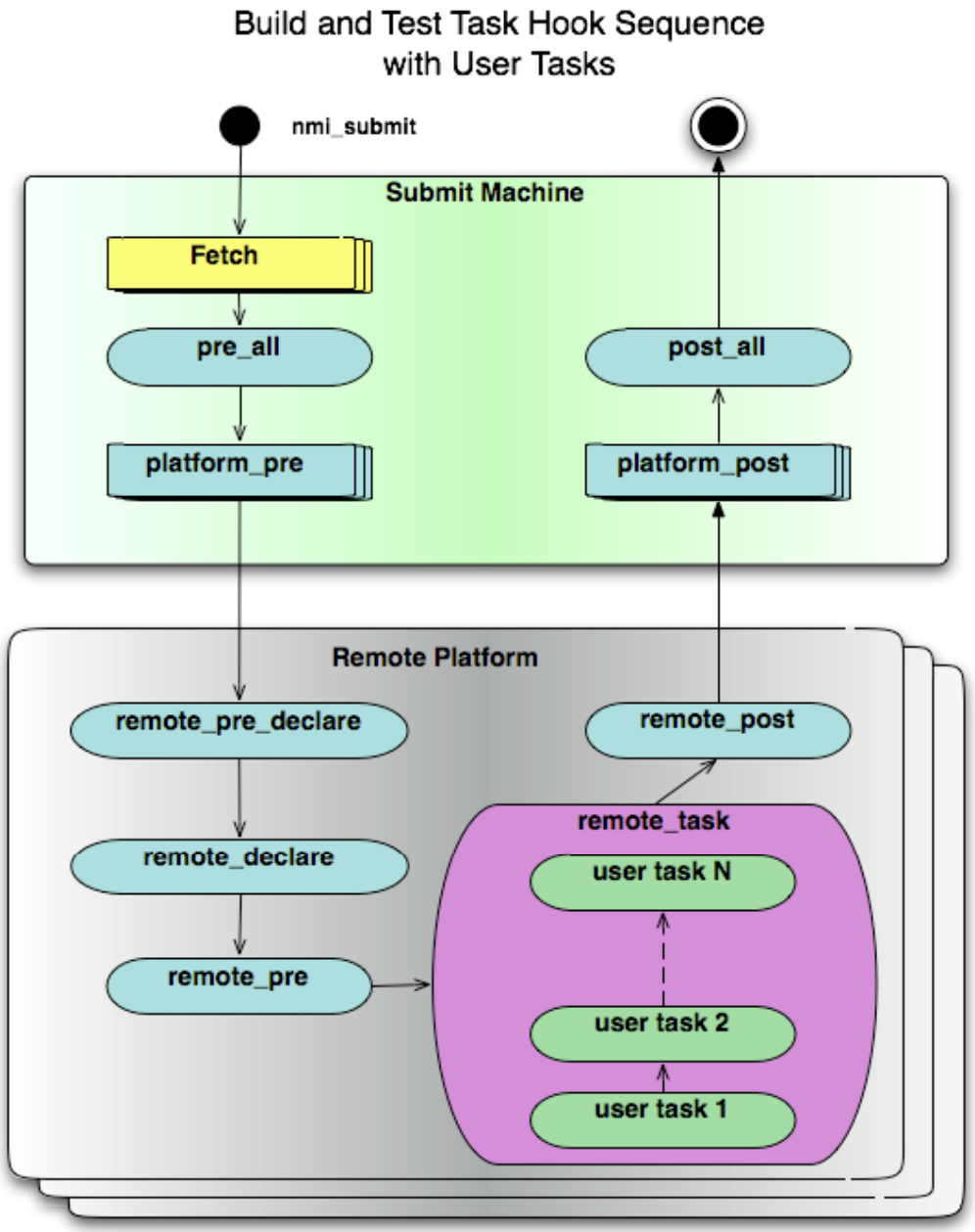
NMI architecture



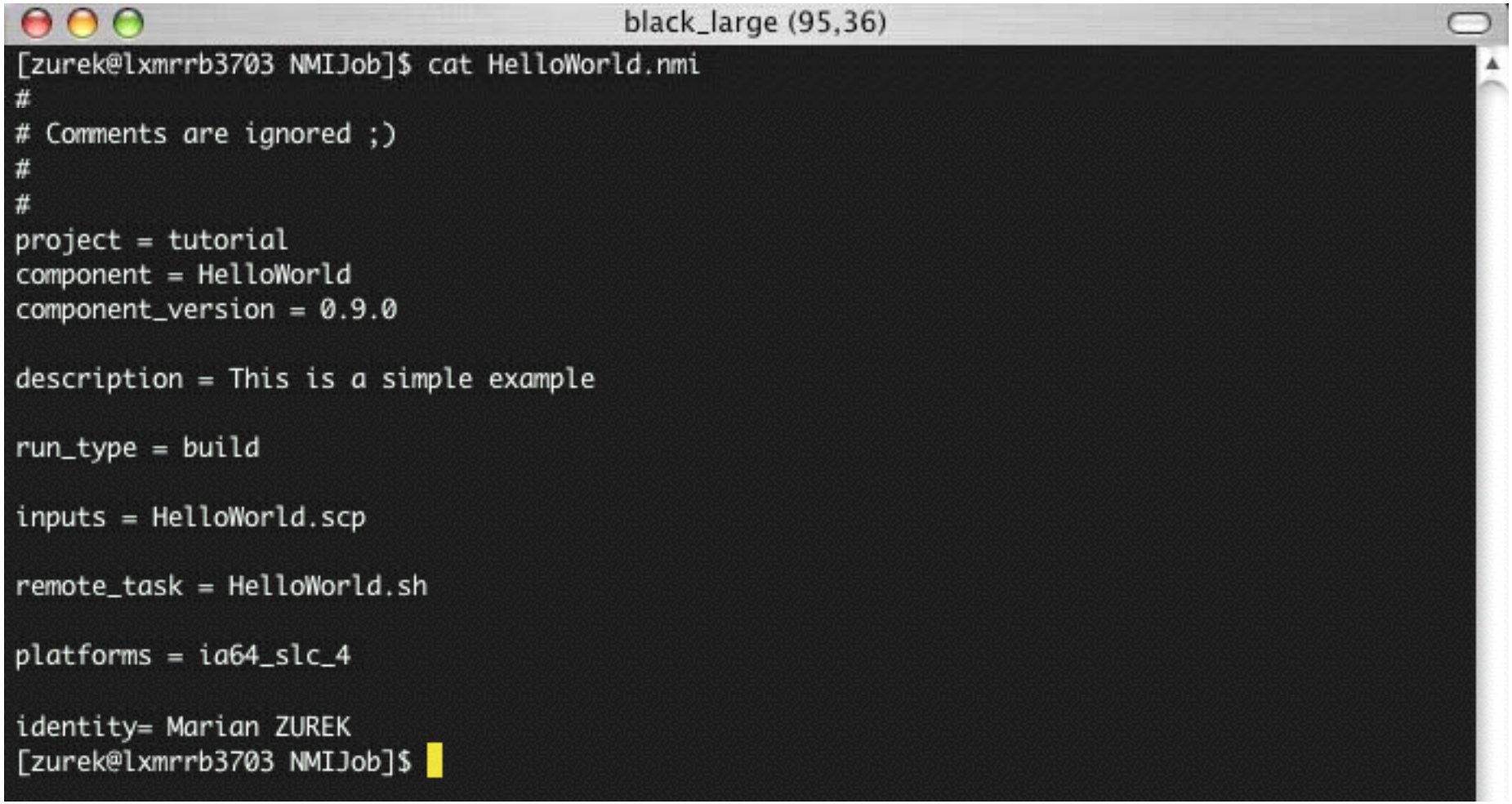
NMI job


Build & Test Task Hook Sequence
nmi_submit
Submit Machine
Fetch
pre_all
platform_pre
post_all
platform_post
Remote Platform
remote_pre_declare
remote_declare
remote_pre
remote_post_always
remote_post
remote_task

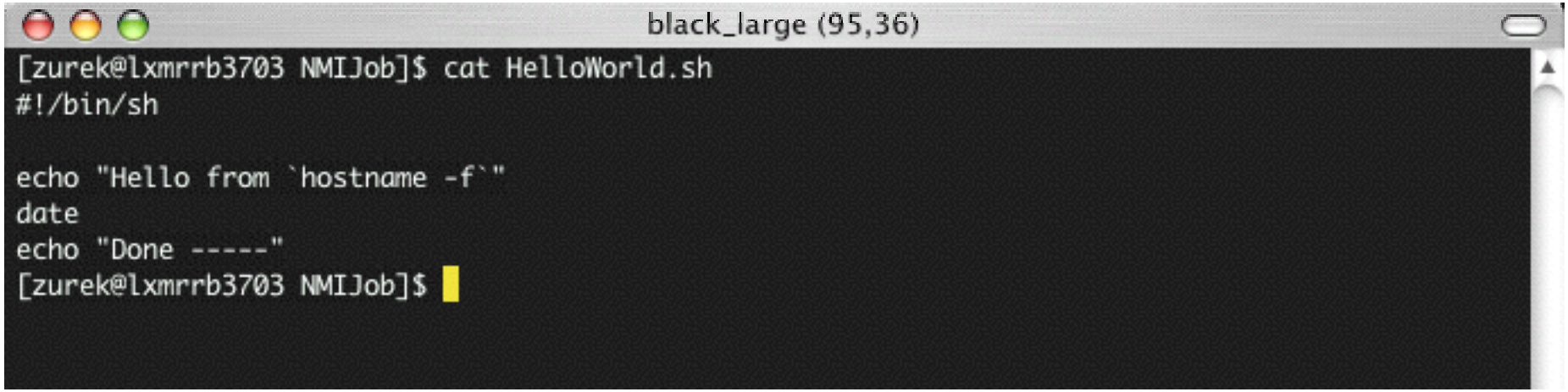
NMI job


Build and Test Task Hook Sequence
with User Tasks
nmi_submit
Submit Machine
Fetch
pre_all
platform_pre
post_all
platform_post
Remote Platform
remote_pre_declare
remote_declare
remote_pre
remote_post
remote_task
user task N
user task 2
user task 1

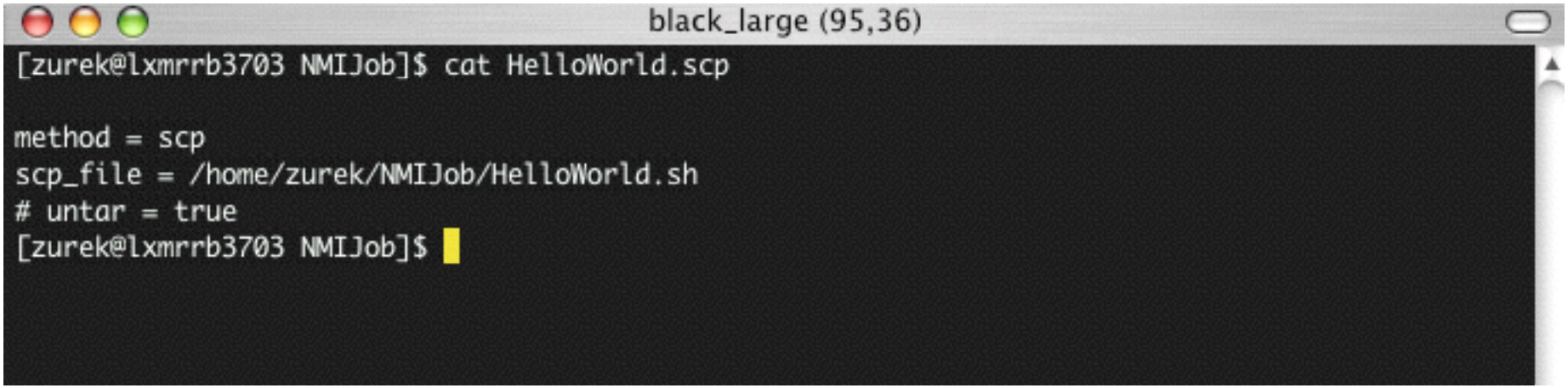
HelloWorld.nmi



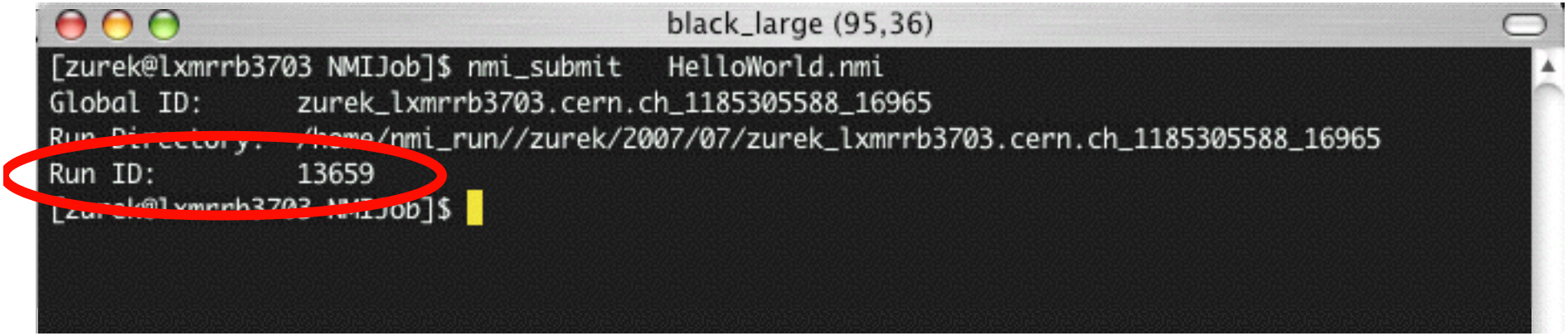
HelloWorld.sh



HelloWorld.scp



- **Methods available:**
  - http
  - cvs
  - svn
  - ftp
  - nmi - one build or test run wishes to use the results of another



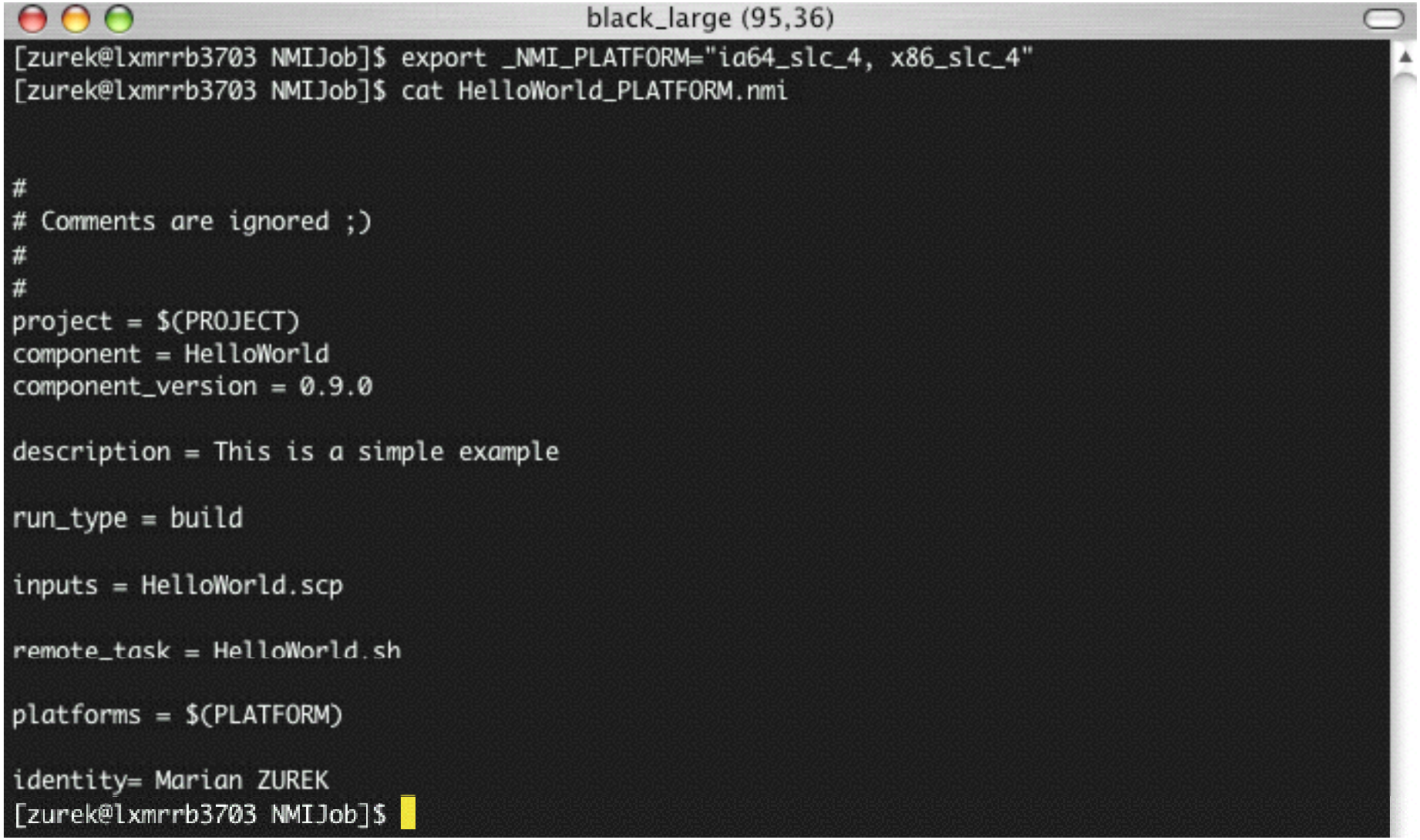
- **The Run ID is the identifier of your job. Look for it at the NMI web interface:**

http://etics.cern.ch/nmi/index.php?page=results/overview

HelloWorld 2

- **Practical hands-on exercise here**

NMI variables



Targeting the IPv6 node

black_large (88,31)

```
[zurek@lxmrrb3703 NMIJob]$ cat test_IPv6.nmi
project = IPv6 tests

component = simple test

description =Targetting the  IPv6 resources

version = VERSION_HERE

inputs = script.scp

remote_task = script.sh

platforms = x86_slc_4

append_requirements = ( host_network_stack =?= "IPv6" )
++job_network_stack = "IPv6"

run_type = build

identity=Marian ZUREK
notify=Marian.ZUREK@cern.ch
[zurek@lxmrrb3703 NMIJob]$
```

Targeting the specific IPv6 node

black_large (98,31)

```
[zurek@lxmrrb3703 NMIJob]$ cat test_IPv6_dev2.nmi
project = GARR_UREC_IPv6_Setup

component = component_name

description = Tests with targetting the specific node

version = VERSION_HERE

inputs = script.scp

remote_task = script.sh

platforms = x86_slc_4

append_requirements = ((host_network_stack =?= "IPv6") && (Machine == "dev2-4.dir.garr.it"))
++job_network_stack = "IPv6"

run_type = build
[zurek@lxmrrb3703 NMIJob]$
```

Towards the automated tests

- **Please consider the manual submission to the ETICS pool as the intermediate step**

- **We should rather use the etics client (etics-test … command) in the future profiting from the information stored in the ETICS database and the whole infrastructure e.g.**

```
etics-test .. --configuration <your_etics_configuration_here>
  --remote-platforms slc4_ia32_gcc346 -ipv6 "gLite IPv6 compliance"
```

More ...

- **NMI**

  http://nmi.cs.wisc.edu/node/65

- **Condor**

  http://www.cs.wisc.edu/condor/

- **ETICS**

  http://eu-etics.org

Q & A