

EDGeS

How to connect your DG to EDGeS?

Zoltán Farkas, MTA SZTAKI



Outline

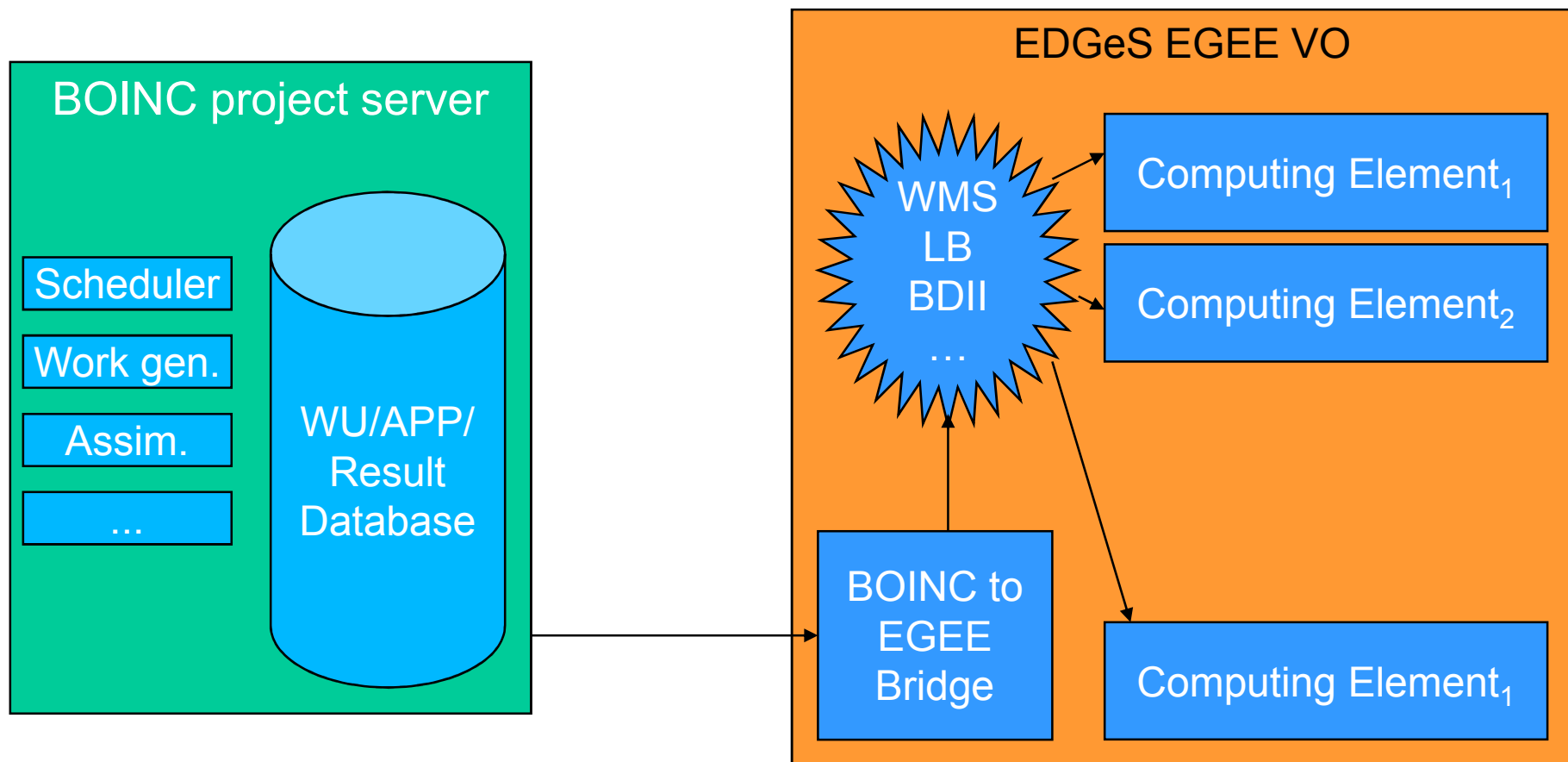
- What this HOWTO is about?
- BOINC -> EGEE bridge in detail
- Prerequisites
- What has to be performed:
 - From the BOINC admin's point of view
 - From the EDGeS admin's point of view



Aim of this HOWTO

- YOU ARE: a BOINC project admin
 - YOU WANT TO: improve the computation performance of your BOINC „grid“
 - YOU'D LIKE TO USE: the EDGeS EGEE VO computing resources
 - WITH TECHNOLOGY: 3G Bridge
-
- In a nutshell: run your BOINC workunits on the EDGeS EGEE VO

System overview





BOINC -> EGEE bridge details

- Task to be solved:
 - Process BOINC workunits
 - In an EGEE infrastructure
- Using a bridge that:
 - Is able to handle BOINC workunits
 - And is able to create EGEE jobs from the workunits, and run them in EGEE



BOINC -> EGEE

Bridge solution concept

- **Wrapped workunit execution:**
 - Fetch BOINC workunits
 - Parse the workunits' contents instead of starting them, and wrap them into a package
 - Send the package to the 3G Bridge
 - An EGEE plugin of the 3G Bridge arranges the package execution on EGEE
 - The result of the EGEE execution (output package) is unpacked, and results are sent back to the BOINC project



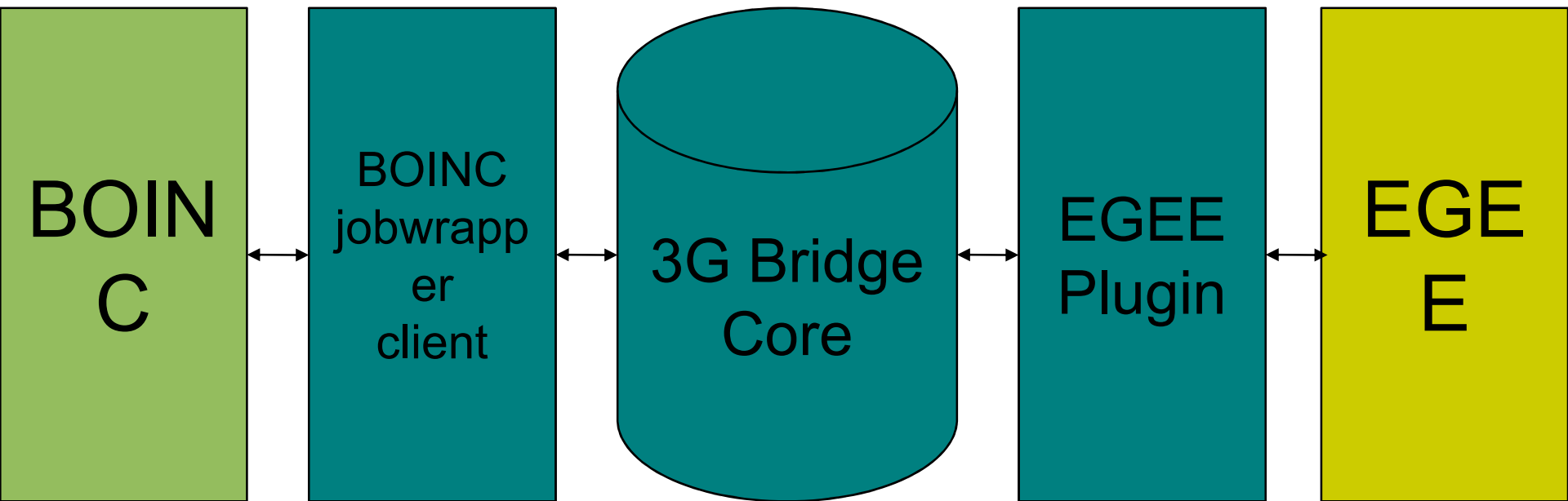
BOINC → EGEE bridge

Using 3G Bridge concept

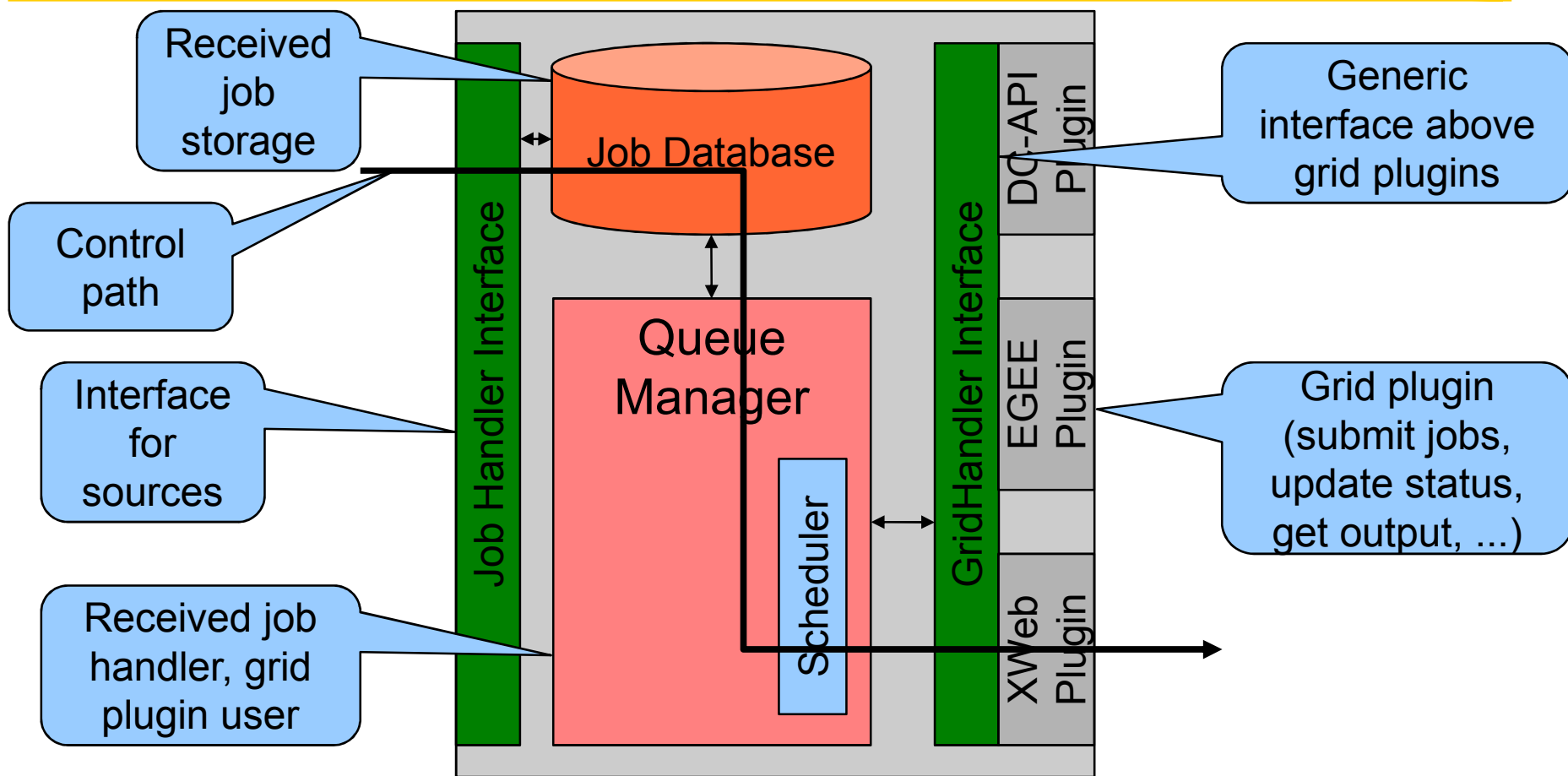
- Collect jobs originating from BOINC:
 - Place them in a queue
 - New jobs in the queue are periodically handled by an EGEE plugin, that
 - Uses Collection possibilities of EGEE to submit many jobs in one request
- This way the usage of the WMS is reduced



BOINC → EGEE bridge Using 3G Bridge concept



3G Bridge Core + Plugins





Prerequisites

- A BOINC project
- An EDGeS VO
 - See Zoltan Balaton's earlier slides
- An EGEE User Interface machine with:
 - BOINC jobwrapper client installed
 - BOINC jobwrapper installed
 - 3G Bridge with EGEE plugin support installed
 - EDGeS VO configured



Tasks of the BOINC project admin I.

- Get a grid certificate from your national CA
 - Certificates are essential for accessing EGEE services
 - Consists of two parts :
 - Public key
 - Private key protected by a password
 - Usually are valid for a year, can be extended
 - Are used to identify you within the EGEE grid infrastructure



Tasks of the BOINC project admin II.

- Upload a long-term proxy to the EDGeS MyProxy server
 - Proxies are generated from your certificate by decoding its key (using the password) and offering usually a short lifetime (few hours)
 - Long-term proxies are stored on trusted entities (MyProxy servers), are used to generate short-term proxies in a trustworthy manner
 - Use this command:

```
GT_PROXY_MODE=old myproxy-init -s myproxy.grid.edges-grid.eu -d -n
```



Tasks of the BOINC project admin III.

- Send your certificate's subject to the EDGeS Admin
- Create a new BOINC user on the BOINC project
- Send the BOINC project's URL to the EDGeS Admin
- Send the new BOINC user's account key to the EDGeS Admin



Tasks of the EDGeS admin I.

- Wait for the info provided by the BOINC admin
- Update 3G Bridge config file:

```
[new_boinc]
hostname = desktopgrid.vo.edges-grid.eu
wmpoxy-endpoint = https://wms.grid.edges-grid.eu:7443/glite_wms_wmpoxy_server
myproxy_host = myproxy.grid.edges-grid.eu
myproxy_port = 7512
myproxy_user = /C=HU/... ← Certificate subject
myproxy_authcert = /etc/grid-security/bridge.cert
myproxy_authkey = /etc/grid-security/bridge.key
isb_url = gsi/ftp://fn2.hpcc.sztaki.hu/dpm/hpcc.sztaki.hu/home/desktopgrid.vo.edges-grid.eu/3g-bridge_ui1.grid.edges-grid.eu/
joblogdir = /var/log/3g-bridge/joblogs
joblogs = error
[jobwrapper-newproject]
grid = new_boinc
logdir = /var/log/3g-bridge/jobwrapper-newproject-wrapper.log
```

New plugin

Certificate subject

BOINC

jobwrapper



Tasks of the EDGeS admin II.

- Create a new algorithm queue in the 3G Bridge database for the 'new_boinc' plugin:

```
mysql> insert into cg_algqueue(grid, alg,  
batchsize) values('new_boinc', '', 10);
```

 - The above command adds a new queue for the 'new_boinc' plugin using any executable and using collection size 10 during job submission
- Restart the bridge, so the new plugin will be initialized



Tasks of the EDGeS admin III.

- Create a new working directory for the BOINC jobwrapper client
- Create jobwrapper_config.xml in the dir:
 - Use 10 CPUs
 - Use GUI RPC port 10000
 - Specify the jobwrapper binary
 - Also specify the config section

```
<cpu>10</cpu>  
<jobwrapper_binary>/usr/libexec/3g-bridge/jobwrapper</jobwrapper_binary>  
<bridge_conf>/etc/3g-bridge.conf</bridge_conf>  
<conf_section>jobwrapper-newproject</conf_section>  
<gui_rpc_port>10000</gui_rpc_port>
```




Tasks of the EDGeS admin IV.

- Attach to the BOINC project
- Restart the BOINC jobwrapper service on the EGEE UI machine



Summary

- A few simple tasks have to be performed by the BOINC project admin
- Some other configuration has to be performed by the EGEE admin
- For details, see:
http://intraweb.edges-grid.eu/public/grid_deployment/