

BAR Demo

Bandwidth Allocation and Reservation

EGEE JRA4

EGEE04 conference, Pisa, Italy

26/10/2005

The Grid community has always taken the network to be available, providing a desired level of service at any time.

Little attention has been paid to performance implications due to network failures, congestion or denial of service attacks.

Viable production Grid platforms require quantitative and qualitative performance guarantees from the network.

This can be achieved by advanced reservation and allocation of network services.

BAR: Bandwidth Allocation and Reservation.

Defines a programmatic interface for an *Advance Reservation* and *Allocation* of network services.

Web service to provide a software-based, advance reservation system for the QoS guarantees.

Intended for use by gLite middleware components, though suitable to be generally useful.

Interaction with network in “application terms” rather than “network terms”.

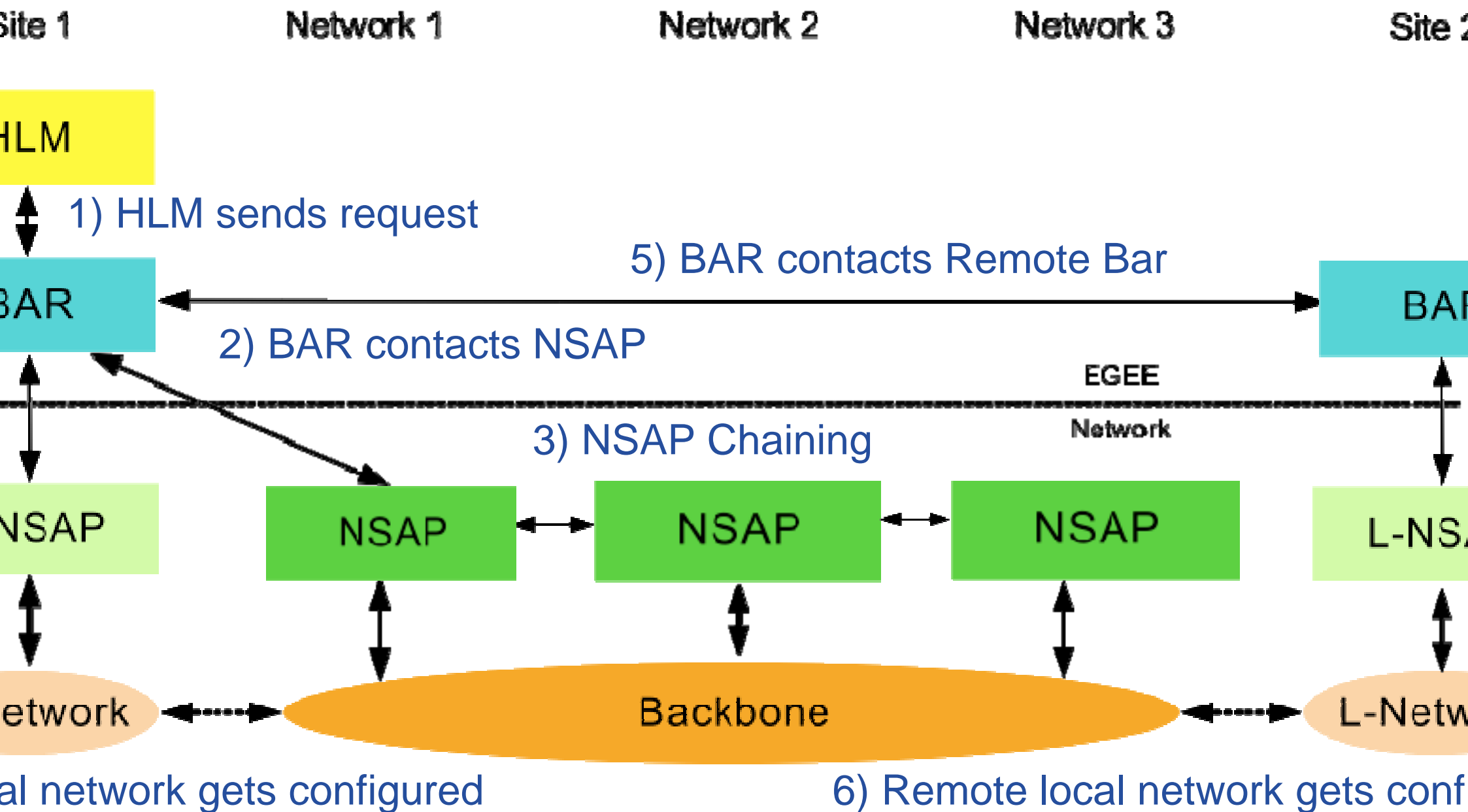
Immediate need for Bandwidth Allocation and Reservation in a production Grid

Guaranteed delivery of data to allow jobs to run in a timely fashion

- Required data is available at job before it runs
- Data created must be available as quickly as possible

Guaranteed bandwidth

- To improve interactivity of Grid applications
- Priority treatment to control traffic

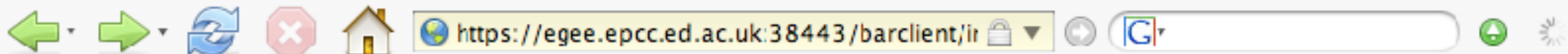


HLM: Higher Layer Middleware client

NSAP: Network Service Access Point (GEANT2)

Use Case:

Let's make an advanced reservation for a large file transfer



Bandwidth Allocation and Reservation Available Services

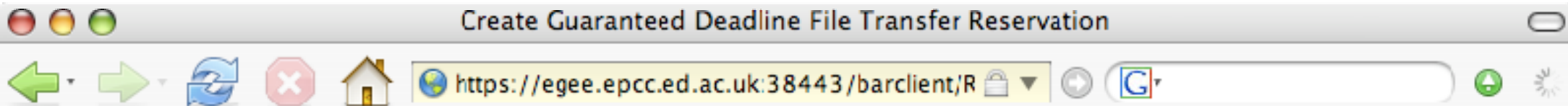
[Create a reservation for a file transfer with guaranteed deadline](#)

[Create a reservation for a virtual leased line](#)

[Create a request for cancellation of a reserved service](#)

[Create a request to query a reserved service](#)

MJRA 4.7 (v0.3.0) - [Help](#)



Bandwidth Allocation and Reservation

Create Guaranteed Deadline File Transfer Reservation

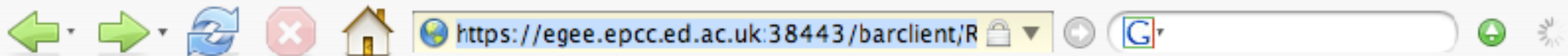
Reservation Detail

Source *	<input type="text" value="egee.epcc.ed.ac.uk"/>
Destination *	<input type="text" value="pcl.rm1.garr.net"/>
Start Date *	<input type="text"/> (DD / MM / YYYY)
Start Time *	<input type="text" value="00:00"/>
End Date *	<input type="text"/> (DD / MM / YYYY)
End Time *	<input type="text" value="00:00"/>
File Size *	<input type="text"/> kB (Integer value)

OK

Cancel

* - Mandatory Fields



Bandwidth Allocation and Reservation

Create Guaranteed Deadline File Transfer Reservation

Reservation Detail

Source *	<input type="text" value="egee.epcc.ed.ac.uk"/>
Destination *	<input type="text" value="mmedia.admin.grnet.gr"/>
Start Date *	<input type="text" value="27/10/2005"/> (DD / MM / YYYY)
Start Time *	<input type="text" value="09:00"/>
End Date *	<input type="text" value="27/10/2005"/> (DD / MM / YYYY)
End Time *	<input type="text" value="10:30"/>
File Size *	<input type="text" value="15000000"/> kB (Integer value)

OK

Cancel

* - Mandatory Fields

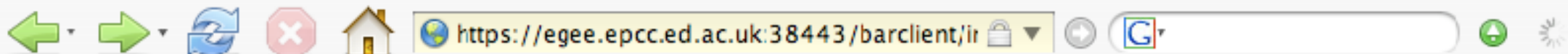


BAR Guaranteed Deadline File Transfer Service

GDFT Reservation successful, your Service ID is 20

Service ID	20
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Home



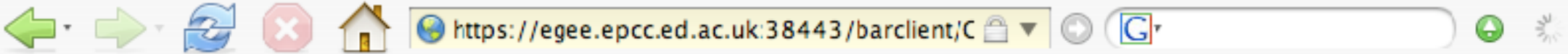
Bandwidth Allocation and Reservation Available Services

[Create a reservation for a file transfer with guaranteed deadline](#)

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https://egee.epcc.ed.ac.uk:38443/barclient/C



Bandwidth Allocation and Reservation

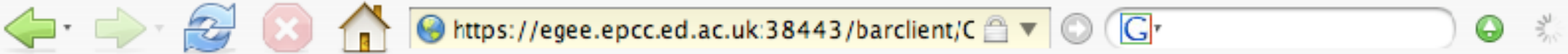
Query BAR Service

Details

Service ID *	<input type="text"/>
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OK **Cancel**

* - Mandatory Fields



Bandwidth Allocation and Reservation

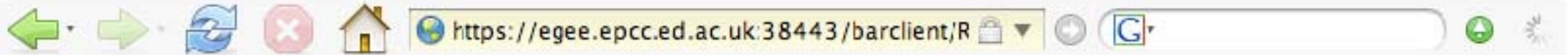
Query BAR Service

Details

Service ID *	<input type="text" value="20"/>
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OK **Cancel**

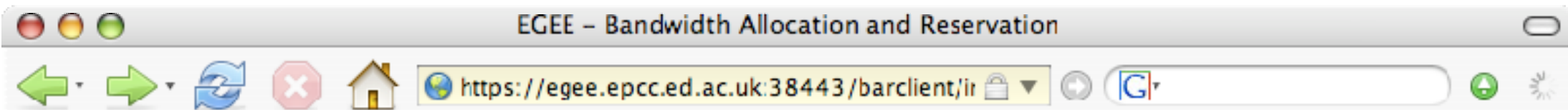
* - Mandatory Fields



BAR Query Service

Query of service with ID 20 was successful

Service ID	20
Status	active
Source / Type	egee.epcc.ed.ac.uk / IPv4
Destination / Type	mmedia.admin.grnet.gr / IPv4
Start Date and Time	27-Oct-2005 09:00:00
End Date and Time	27-Oct-2005 10:30:00
Bandwidth Forward	45511.0 kbps
Bandwidth Reverse	4551.0 kbps



Bandwidth Allocation and Reservation Available Services

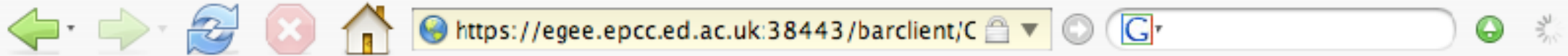
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Bandwidth Allocation and Reservation

Cancel BAR Service

Details

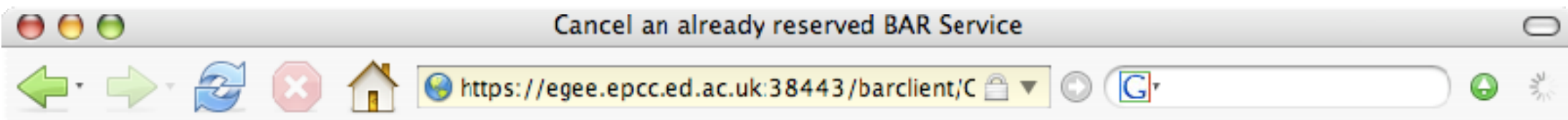
Service ID *

Cancel Reason

OK

Cancel

* - Mandatory Fields



Bandwidth Allocation and Reservation

Cancel BAR Service

Details

Service ID *	<input type="text" value="20"/>
Cancel Reason	<pre>Transfer postponed.</pre>

* - Mandatory Fields



BAR Cancel Service

Cancellation of service with ID 20 was successful

Service ID	20
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Home

- **Test drive BAR here**

- **or visit**

<http://egee.epcc.ed.ac.uk:38080/barclient>

<https://egee.epcc.ed.ac.uk:38443/barclient>

- **or download from JRA4 homepage**

<http://egee-jra4.web.cern.ch/EGEE-JRA4>