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WP2 Report

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Roma, 19/02/2007

EGEE SA2 – EUChinaGRID – ETICS

Collaboration meeting

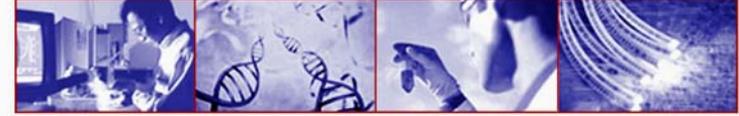


FP6-2004-Infrastructures-6-SSA-026634



Information Society
and Media

<http://www.euchinagrid.org>



Wp2 Objectives

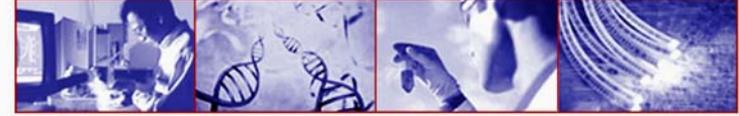
Mainly O3 and O4 (see Technical Annex)

- ▶ O3 – *To support the interoperability of existing European and Chinese Grid infrastructures, towards the creation of a “virtual Grid-based research space” for eScience, in an integrated multi-protocol (IPv4/IPv6) environment.*
 - Studies related to this objective were started and preliminary tests are under way

- ▶ O4 – *To exploit the existing and planned infrastructure provided by the research networks like GEANT2 and the initiatives of high-speed intercontinental connections, such as TEIN2 and ORIENT.*
 - Good relationships were already established between EUChinaGRID and the projects ORIENT and TEIN2. Part of the EUChinaGRID community is already using the existing network connectivity

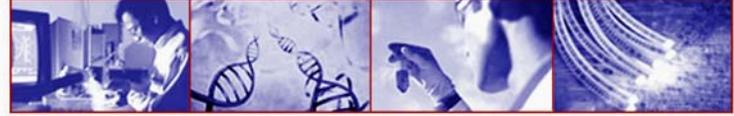
Interoperability report - deliverable 2.2

- ▶ document no.: D2.2
- ▶ document title: Initial interoperability report
- ▶ deadline: 30/09/2006
- ▶ delivery to EU due on: 14/11/2006
- ▶ status: done
- ▶ responsible partner: GARR
- ▶ document: [Initial interoperability report](#)
- ▶ previous versions: none
- ▶ abstract: This document describes the results of the firsts IPv6 interoperability tests on the gLite and GOS middleware. The document also reports the action started in order to draw the list of modules and third party components not compatible with a multi-protocol environment and aims to be an initial guidelines document for middleware developers.



gLite IPv6 interoperability

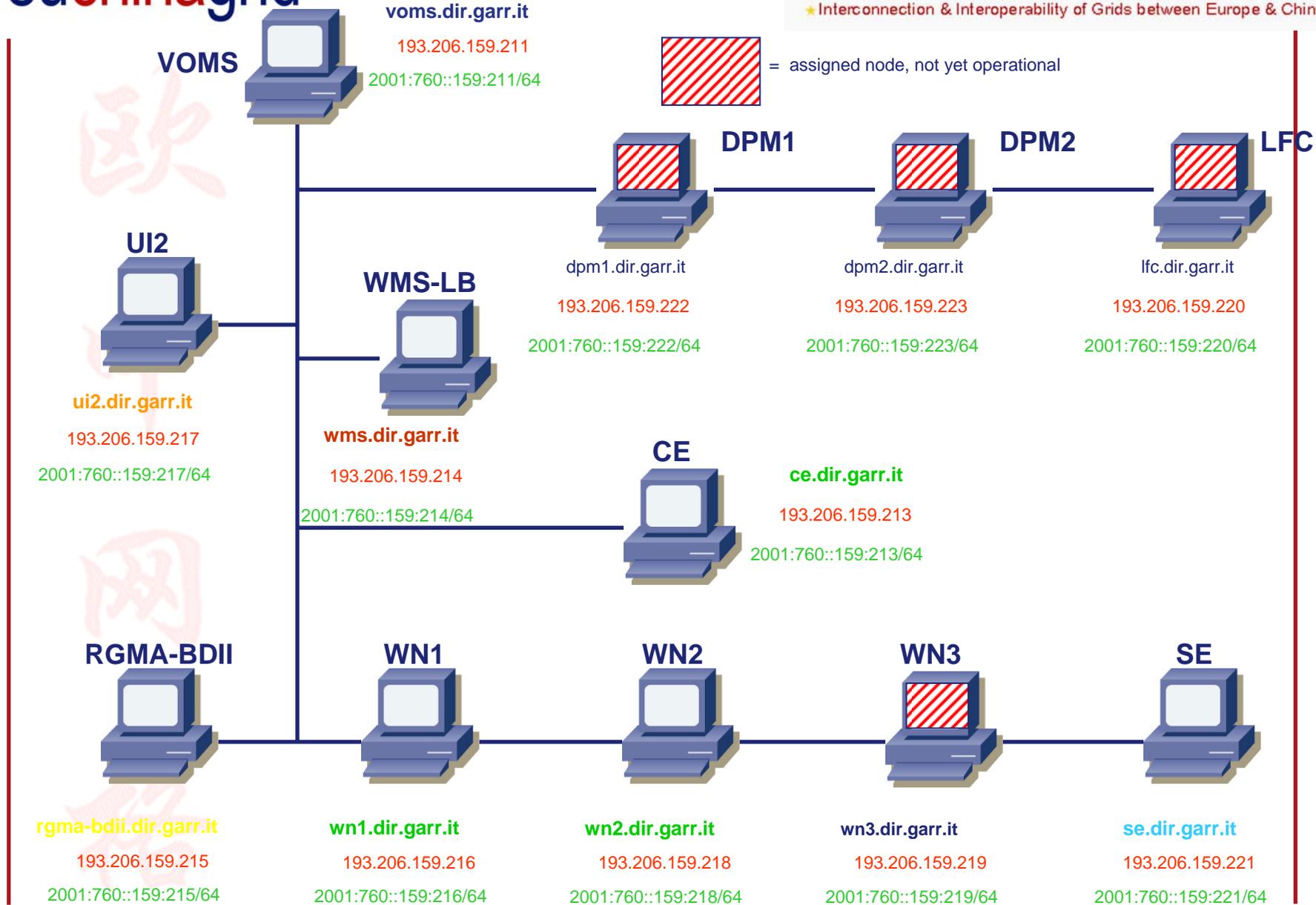
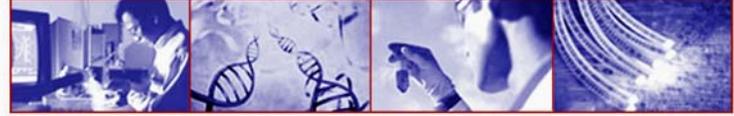
- ▶ *The specific network functions needed for software to be IPv6-compliant were highlighted and a first code survey of gLite was carried out by GARR and INFN through a specific tool written for this purpose, code checker.*
- ▶ *The use of code checker on a IPv6 testbed hosted and implemented at GARR premises for this purpose highlighted a number of IP version dependencies in the gLite code and showed that the larger part of network functions used in it are not compliant to RFC-3493, which tackles this very problem.*
- ▶ *This issue was addressed by drafting a migration guideline document, afterwards delivered to the EGEE middleware developers.*



IPv6 Code checker

org.glite.security.voms

<i>INADDR_</i>	<i>[FAILED]</i>
<i>addr_in</i>	<i>[FAILED]</i>
<i>F_INET\$</i>	<i>[PASSED]</i>
<i>gethostbyname</i>	<i>[FAILED]</i>
<i>inet_addr</i>	<i>[PASSED]</i>
<i>inet_ntoa</i>	<i>[PASSED]</i>
<i>Inet4Address</i>	<i>[PASSED]</i>
<i>inet_aton</i>	<i>[PASSED]</i>
<i>gethostbyname_ex</i>	<i>[PASSED]</i>
<i>INADDR_BROADCAST</i>	<i>[PASSED]</i>
<i>0.0.0.0</i>	<i>[FAILED]</i>
<i>127.0.0.1</i>	<i>[PASSED]</i>
<i>255.255.255.255</i>	<i>[PASSED]</i>





GOS IPv6 migration

- ▶ *GOS is written in Java, which natively supports IPv6 and, if compared with other programming languages such as C++, is almost transparent to the protocol version.*
- ▶ *A fully dual-stack version of GOS has been deployed by BUAA.*
- ▶ *In this framework, adjustments in the DMBS were required and some configuration and management tools, such as script for GOS boot, stop, router manage, etc was rewritten.*
- ▶ *The new release of GOS was thoroughly tested on the test-bed set up on servers at Beihang University (BUAA), Tsinghua University and Institute of Computing Technology (ICT) in Chinese Academy of Sciences (CAS).*
- ▶ *GOS was deployed on 11 main nodes of CNGrid.*



GOS on IPv6

PORTAL HOME - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://[2001:da8:ae:200:4e00:10ff:feac:83ad]:38080/portal/index.html

Google

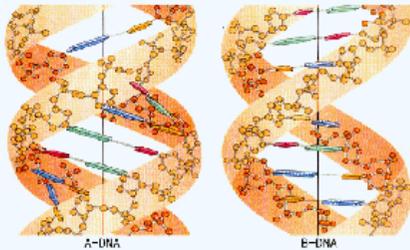
Welcome: Grid Admin

Submitted Job List

Refresh Logout

CNGrid PORTAL

- AgoraList
 - Mine
 - batchAgora
 - DefaultAgora
 - Entered
 - Others
- PersonalData
- AdminSet
 - Configure
 - UserApplyList
 - AgoraApplyList
 - GripInfo
 - UserList
 - AgoraList
- CreateAgora



The **BLAST** (Basic Local Alignment Search Tool) programs are widely used tools for searching DNA and protein databases for sequence similarity to identify homologs to a query sequence.

[BLAST MANUAL](#)

indispensable parameters:

Select Node:

Job Name:

Program Name[-p] ([Help](#)):

Database [-d] ([Help](#)):

StageIn mode:

Load Query File [-i]:

Download Sample File: [For "blastp" and "test_aa_db"](#)
[For "blastn" and "fasta.pan_troglodytes.007"](#)

Or enter sequence below in [FASTA](#) format:



GOS on IPv6

File Edit View History Bookmarks Tools Help

http://[[2001:da8:ae:200:4e00:10ff:feac:83ad]:38080/portal/index.html

Welcome: Grid Admin Return Refresh

[Refresh](#) [Logout](#)

- ✱ CNGrid PORTAL
 - ✱ AgoraList
 - ✱ Mine
 - batchAgora
 - DefaultAgora
 - Entered
 - Others
 - ✱ PersonalData
 - ✱ AdminSet
 - Configure
 - UserApplyList
 - AgoraApplyList
 - GripInfo
 - UserList
 - AgoraList
 - ✱ CreateAgora

Detailed Job Information :

AppName	2007-1-30-blasttest-001
Executable	export PATH=\$PATH:/opt/wwwblast/; mkdir 1170237392953; ...
JobState	done
AddTime	Wed Jan 31 18:04:58 CST 2007
BatchID	urn:gridsam:ff808081107747880110779d3e600093
submitTime	2007-01-31 18:04:57
UpdateTime	Wed Jan 31 18:04:58 CST 2007
CpuApplyNumber	0
ClientIP	null
Description	
JobID	null
LoginIP	219.224.191.248
ServiceURL	http://219.224.191.248:38080/batch/services/batch
UserDN	CN=NetworkCenterAdmin, OU=GOS, O=ICT.AC.CN, L=Haidian, ST=Beijing, C=CN
StageOut	ftp://gos:gos@[2001:da8:ae:200:4e00:10ff:feac:83ad]:21/home/gos/testresult/resultOfBLAST_1170237392953.jsp ftp://gos:gos@[2001:da8:ae:200:4e00:10ff:feac:83ad]:21/home/gos/testresult/totalresult1170237392953.zip ftp://gos:gos@[2001:da8:ae:200:4e00:10ff:feac:83ad]:21/home/gos/testresult/stdout.txt ftp://gos:gos@[2001:da8:ae:200:4e00:10ff:feac:83ad]:21/home/gos/testresult/stderr.txt
JSDL File	Click Here to Download
Delete Record:	Click Here to Delete This Job Record





CNIC and SDG IPv6 version

- ▶ *In June, CNIC started to set up a dedicated IPv6 testing environment. The dedicated environment has been setup at September and connected to the CSTNET IPv6 network by 1Gbps.*
- ▶ *SDG middleware in an IPv6 environment.*
 - *SDG stands for Scientific Data Grid, an application grid of CNGrid aiming at uniform data access service on heterogeneous relational databases and effective discovery service on a number of databases covering many disciplines. This effort resulted in the release of DASv6, a branch version of SDG middleware, which was fully tested in the IPv6 environment.*
 - *<http://das.sdq.ac.cn:8080/dataview> .*



SDG on IPv6



- Table Data Access Service
- Pubmed database
 - Construction inquiries →
 - [Advanced Query](#)
- Sequence reservoir characterization
 - Construction inquiries →
 - [Advanced Query](#)
- International Nucleotide Sequence Database avian flu
 - Construction inquiries →
 - [Advanced Query](#)
- Progress database international bird flu
 - Construction inquiries →
 - [Advanced Query](#)
- Avian flu database
 - Construction inquiries →
 - [Advanced Query](#)
- Qinghai host Acquisition
 - Construction inquiries →
 - [Advanced Query](#)
- Host avian flu birds
 - Construction inquiries →
 - [Advanced Query](#)

项目背景

You are welcome to use the following website addresses : 64.233.182.136

[Use help](#)

Data Access System (DAS) is the scientific data grid project "Uniform Data Access" module. The application of the scientific database, aimed at resolving the massive distribution of hetero the database unit or service providers to ins environment is the son of professional data physical database systems, the physical da grid services through redeployment of reso



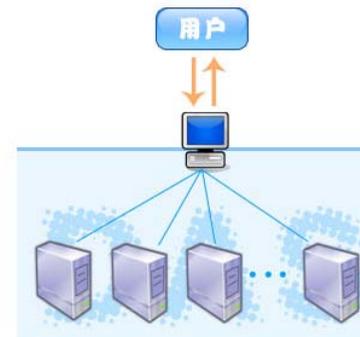
- 数据访问服务列表
- pubmed文献数据库
 - [构造查询](#)
 - [高级查询](#)
- 序列特性描述库
 - [构造查询](#)
 - [高级查询](#)
- 禽流感国际核酸序列数据库
 - [构造查询](#)
 - [高级查询](#)
- 禽流感国际研究进展数据库
 - [构造查询](#)
 - [高级查询](#)
- 禽流感文献数据库
 - [构造查询](#)
 - [高级查询](#)
- 青海采集宿主
 - [构造查询](#)
 - [高级查询](#)
- 禽流感野鸟宿主

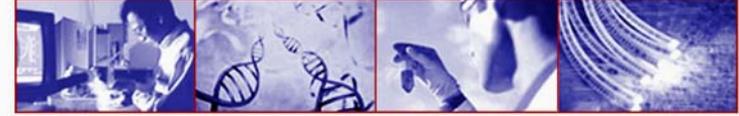
项目背景

您正使用如下地址访问此网站 : 2001:760:0:0:0:0:cafe

[使用帮助](#)

数据访问服务系统 (DAS) 属于科学数据网格项目中“数据统一访问”模块。该系统应用在科学数据库中,旨在解决大规模的分布、异构、自治数据库群的统一访问问题。科学数据库建库单位的数据库管理员或服务提供者安装本软件,在所属专业子库上成功部署数据访问服务之后,即实现了在网格环境下该专业子库的数据发布,对外提供访问数据资源的网格服务。DAS介于数据用户和物理数据库系统之间,对物理数据库进行封装后,对外提供数据访问的网格服务接口。通用Web检索前端(DataView)通过调用网格服务访问数据库资源。





Ipv6 compatibility of GRID middleware

- ▶ *Are libraries, software and other elements developed by third parties, such as the MySQL DBMS used in both gLite and GOS, IPv6 compliant?*
- ▶ *A specific task was started in order to investigate this point, resulting in the compilation of a list of modules and third-party components **not compatible** with a multi-protocol environment.*

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IPv6 compatibility of GRID middleware



- ▶ home
- ▶ documentation
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 - ▶ deliverables
 - ▶ presentations
- ▶ code checker
- ▶ IPv6 - grid middleware
- ▶ testbed
 - ▶ participants
 - ▶ agenda
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- ▶ contacts
- ▶ smokeping data

EUChinaGRID Project

IPv6 compatibility of Grid middleware and related software

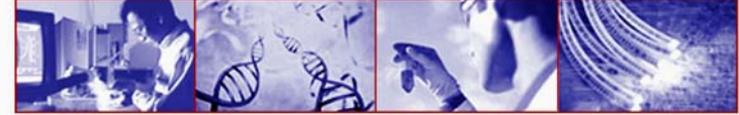
IPv6 compatibility of Grid middleware and related software

Component	Middleware	Internal related documents	Official compatibility	Compatibility tests
Globus-toolkit		IPv6 compatibility of GLOBUS	Yes (note1)	TBD
Condor		IPv6 compatibility of Condor	No (note 2)	TBD
LSF			Yes (note 3)	TBD
PBS			No	TBD
Tomcat		IPv6 compatibility of Tomcat	Yes	Not needed
Java		IPv6 compatibility of Java	Yes	Not needed

Note

1. Globus toolkit (GTK)

This is one of the main components of the grid middleware. On the official document of GKT V3.2 an IPv6 compliance is reported. However, the 6Grid Project reported an IPv6 compliant patched Version 2.2.3 of Globus Toolkit and Shen Jiang of University College of London recommended GTK V3.2.1 for a full IPv6 support (<http://www.cs.ucl.ac.uk/staff/s.jiang/webpage/how-to-IPv6-Globus.htm>).



http://www.euchinagrid.org/IPv6/

The screenshot shows a Mozilla Firefox browser window displaying the EUChinaGRID IPv6 web site. The browser's address bar shows the URL <http://www.euchinagrid.org/IPv6/index.html>. The page content includes the EUChinaGRID IPv6 logo, a navigation menu on the left, a main content area with a welcome message, and a footer with the Consortium GARR logo.

EUChinaGRID IPv6

★ Interconnection & Interoperability of Grids between Europe & China ★

- ▶ [home](#)
- ▶ [documentation](#)
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 - ▶ [presentations](#)
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- ▶ [IPv6 - grid middleware](#)
- ▶ [testbed](#)
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EUChinaGRID Project

Welcome to the **EUChinaGRID IPv6** web site.

Here you can find all the information and the documentation about our IPv6 study on the available and foreseen network connectivity to promote new high bandwidth links between Europe and China or Asia in general and to study the available Grid Middleware for an IPv6 network and the interaction between Grid Services and IPv4-IPv6 communication.

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