



DELIVERABLE D4.1

APPENDIX C

INFRASTRUCTURE SUPPORT

WP4 International Testbed Organisation

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Abstract: This document describes the objectives and the main ideas of the Infrastructure Support Task of the International Testbed Organization. First hints and preliminary information has been included in this documentation in order to trigger the discussions and interaction within our Collaboration.



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	Name	Partner	Date	Signature
From	Josep Salt	CSIC	17-May-2002	
Verified by				
Approved by	Jesus Marco	CSIC	27-May-2002	

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1. INTRODUCTION

1.1 APPLICATION AREA

The document applies to the International Testbed Organisation (WP4). It's audience is all those involved in the development and deployment of the collaboration testbed.

1.2 DEFINITIONS, ACRONYMS, AND ABBREVIATIONS

Acronyms/Glossary/Abbreviations

IIS	MS Internet Information Service
API	Application Programming Interface
ASP	Application Server Provider
CRM	Customer Relationship Management
My SQL	Open Source Relational Data Base
Q.O.S.	Quality Of Service
RPM	Red Hat Package Manager
VACM	VA Cluster Manager (tool provided by VA Linux)
LCFG	Local Configuration Tool
ASIS	Application Software Installation Server (tool developed at CERN)

1.3 REFERENCES

- [1] "Customer Realtionship Management. The e11 WAY" (White Paper), V. Agrawal, M. Mittal. Delphi Business Review , Vol 3, No 1, 2, 2002.
- [2] User Help Desk (DATAGRID), WP6 (Integration Testbed), DATAGRID Coll.

2. INFRASTRUCTURE SUPPORT

2.1. OBJECTIVES OF THE TASK.

The main goals of the Infrastructure Support Task are:

1. To study the available tools for Fabric Management for GRID's
2. To define an User Support and Help Desk for the Collaboration
3. To provide the Installation Kit
4. To provide Network Support

The interdependence with the other tasks of WP4 is evident:

The partners of this task are the following: FZK , U. Of Cyprus, A. U. Th., LIP, UAB, USC-CESGA and CSIC.

An important aspect in our collaboration is that our applications are interactive, therefore a lot of problems would be related with this feature.

2.2. PARTNERS AND CONTACT PERSONS

FZK	Forschungszentrum Karlsruhe GmbH (Karlsruhe,D)	M. Kunze
AUTh	Aristotle University of Thessaloniki (Thessaloniki,GR)	C. Petridou
UAB	Universitat Autònoma de Bellaterra (Barcelona,E)	E. Heymann
LIP	Laboratorio de Instrumentação e Partículas (Lisboa, P)	J. Gomes
UCY	University of Cyprus (Nicosia, Cyprus)	M. Dikaiakos
USC(CESGA)	Centro de Supercomputación de Galicia (Santiago de C, E)	I. López
CSIC	IFCA(Instituto de Física de Cantabria) – (Santander,E)	R.Marco
“	Red Iris (Madrid, E)	A. Fuentes
“	IFIC (Instituto de Física Corpuscular) – (Valencia, E)	J. Salt

2.3. HUMAN RESOURCES

The task 4.3 has assigned a total of 112 PM with the following breakdown:

<i>Institution</i>	FZK	UCY	CSIC	UAB	CESGA	AUTh	LIP
<i>Fund.Pers.</i>	24	3	16	3	12	18	9
<i>Unf. Pers.</i>	0	3	0	0	8	16	0
<i>Total</i>	24	6	16	3	20	34	9

3. INSTALLATION KIT

The Installation kit must consider different information support:

- 1) CD-Rom
- 2) Configuration Files (as it is being used by DATAGRID)

3.1 REQUIREMENTS

The kit installation can be organised from the starting point taken by DATAGRID project. DATAGRID has two main installation procedures:

1. This procedure is 'by hand' and it relies on the RPM list provided in the following web page: <http://marianne.in2p3.fr/datagrid/testbed1/repositories/pkg-repository.html>
Every RPM's set, once installed, allows obtaining (after configuration) an operational machine as user Interface, Computing Element, etc
2. this second procedure relies on the usage of the LCFG tool and it allows the unified management of a DATAGRID computer farm. This is the IIS (Interim Installation System) – which is the WP4 project month 9 deliverable.

The DATAGRID IIS:

The objective is to provide a common tool to automatically:

- install the system through the network
- configure the system parameters and apply site policies
- make available the needed applications
- run maintenance tasks and perform upgrades whenever needed

The system should provide a real test instance of the prototype configuration management system WP4 plans to deliver for PM9.

The selected tools have been:

- VACM (VA Linux) to provide control for system preparation
- LCFG (Local Configuration)(Edinburgh University) for software installation, upgrade and verification. LCFG can also be used to perform maintenance (routine system administration)

3.2 PREPARATION

The package repository, hosted by FZK –Karlsruhe provides access to the packaged Globus, DATAGRID and required external software. All software is packaged as source and binary RPM files. The most convenient access is via the set of configuration files, which contain predefined sets of the necessary RPM files.

These configuration files simply contain links to the defined rpm files. These may be downloaded in a single shot with command *wget* as:

```
wget -r -nd http://datagrid.in2p3.fr/distribution/rpmlists/<name>
```

with <name> replaced by one of the file names below. This will retrieve all of the referenced rpms to the current directory.

4. USER SUPPORT AND HELP DESK

The User Support activities will allow the cohesive progress of the testbeds of our project and a big effort will be devoted to this aspect. The essential tool will be the implementation of a Help Desk Tool for WP4 which could be extended to the others Work Packages.

Due to the importance of the Testbed Organization the main subjects to cover are the ones related with the deployment, evolution and working of the testbed of the sites. According to the guidelines of the CrossGrid Kick-off meeting, a close interaction with the User Support Group of DATAGRID is recommended because of the overlapping of interests our projects.

4.1 REQUIREMENTS

First of all we need to establish the set of requirements of our User Support and Help desk facility. Let's consider the characteristics of our collaboration: we are 22 partners distributed along Europe, from Portugal to Cyprus. The different level of implementation and deployment of the testbed infrastructure implies that the flux of information and expertise must be an important aspect for the success of our project. Our User Support system must be robust and well designed in order to give a complete service to all the sites involved in CrossGrid.

The main tool of the User Support System is the Help Desk Tool. After a first round of discussions with CrossGrid people and with the DATAGRID User Support people we can give the following requirements:

1. To follow the evolution of a given question. The idea is the following: an user in a given site X might want to ask a question about the testbed infrastructure and he can formulate the question through the Help Desk Tool. The tool should give the possibility of performing the routing of this question to the expert person and to assign a reference number to identify it during the procedure lifetime (the so-called 'HD ticket'). At the moment of the explanation of the question the user will fill the key fields. According to that the question will be addressed to one of the list of experts. This expert will have to answer in a given time to the user and the user should inform if the question has been solved. There will be a time out for the submission of the acknowledge by the user. At the end of this time, the 'question entry' will be deleted.
2. To include a 'Frequently Asked Questions' (FAQ) in the Help Desk in order to speed-up the procedure if the question is an usual or standard one. In fact, the standard procedure for any HD user should be to consult the pages of FAQ and, if no entry of the FAQ utility satisfies the user doubts/question, then the user can formulate the question by the HD tool. Another important point to establish is who can ask questions to the HD: everybody in the Collaboration, some registered people, ...
3. To define the User Support Team: There will be two levels of service: the first one will receive the questions, acknowledges receipt of the problem, and may directly solve the problem. The second level is composed of identified experts in the several categories. The User Support Team will be composed of Testbed users and sites administrators who know and have used the Testbed software.
3. To generate Installation Recipes
3. To have access to tutorials
4. To build a Knowledge Data Base: It is necessary to explain the procedure for the generation of the DataBase: will it be only a Finding Tool? Or will it be a tool which can incorporate the knowledge in the DataBase.
5. To have access to fast links to different services

6. To provide inputs to the Bug Tracking System: Eventually the HD can be used as a storage of the solutions to the different problems related to the Bug Tracking System. This will be discussed in order to define its functionality.

Moreover, the User Support program must have a flexible system in which different media (phone, e-mail, fax, etc) will not be excluded although it would be essential to include the knowledge in the Help Desk Data Base.

4.2 REVIEW OF DIFFERENT HD PRODUCTS

There are many tools in the market, both commercial and free. Commercial tools are expensive and they do not fit well to the CrossGrid Testbed usage.

We have the following examples:

www.sourceforge.org

www.helpdesk.com

www.liberum.com

www.vasoftware.com/sf/sf_30release.php

www.remedy.com

We give the summary of the features of some of these tools:

1) SourceForge 3.0 (VA Software):

It's a product of *VA Software* (web page: <http://sourceforge.net>). SourceForge Enterprise Edition is a collaborative platform that provides a centralized, complete suite of integrated development and collaboration. It drives software developments by connecting expertise, and helping organizations address key challenges of modern software development. The features are:

- Extensive management capabilities:
- Development resources for all environments
- Standards-based for universal, distributed access
- Centralized knowledge, code and expertise
- Turnkey system for immediate productivity
- Scalable beyond 250.000 developers and 25.000 projects
- Enterprise-level technical support

In particular I have selected the capabilities which can be useful for our objectives:

1. Help Wanted System: Development projects can post internal developer assistance through the help .
2. Document Management: It provides web document management functionality, support catalogue and management of text, graphical document types.
3. Discussion Forums
4. Mailing lists

SourceForge.net is the world largest Open Source Development Website supporting more than 27.000 software projects

2) Liberum Help Desk:

Liberum Help desk is the complete desk solution for small to medium sized business and Organizations.

Key features of Liberum HD:

1. Completely web-based
2. E-mail notifications
3. Can utilize Windows NT authentication, so you don't need to manage another database of users
4. Allows for better communication between users and support reps: users can view progress on problems and submit additional information
5. Built-in reporting to keep track of support reps. Which departments are making requests, and what types of problems are being reported,
6. Easily customisable to fit your needs
7. It's completely free!

Technical issues:

It is Open Sourced under the GPL license and free for use. The help desk software:

- written in HTML and ASP
- it is easily modified and customized
- to run Liberum HD is needed Windows NT server running IIS

Requirements for Liberum Help Desk:

1. Windows NT Server
2. Microsoft IIS 4.0 or higher
3. 1MB of hard drive space fro web pages
4. 5+ MB of hard drive space for database
5. A web browser
6. Although not required, MS SQL Server can be used for better performance

3) HelpDesk.COM

Since 1995, Helpesk.Com (see www.helpdesk.com) has been the support industry's de facto on line resource, providing a one-stop knowledge and information portal for service and support IT professionals. There is a long list in the web page with different products.

4.3 EVALUATION CRITERIA AND FIRST STEPS:

In order to decide the criteria to be taken into account for the definitive choice of the Help Desk product, it is necessary to define the evaluation criteria:

- 1) the HD product must fulfil the requirements expressed in the previous section,
- 2) in case of the existence of several options, priority will be given to Open Source products,
- 3) the product must not be expensive (it is better to have the possibility to get a free product).

In order to launch the activities in Help Desk, several actions should be taken:

- a) to provide a ordinary mailing list to obtain the first feedback of the different problems found by the users and system administrators. This initiative will provide the categories of the knowledge data base
- b) to perform an initial and provisional choice: to implement a knowledge data base on MySQL (<http://www.mysql.org>) and a Graphical Client based on PHP (<http://www.php.net>). In this way , the process will be launched with an evaluation period of 30-40 days.

4.4 PREPARATION OF SCHEDULE

Time scheduling is the following:

- First 3 months
 - 1.- review and set up the local infrastructures
 - 2- to provide a Help Desk
 - 3.- reinforce connection with DATAGRID
- Months 4-6
 - 1.- Prepare Installation Kit
 - 2.- Prepare Help Desk set up
- Months 7-10
 - 1.- Update Installation Kit
 - 2- Extend Help desk Support
 - 3.-Report on experience
- Months 11-21
 - 1- Update Installation Kit
 - 2- Consideration of special hardware requirements from application side
- Months 22-30
 - 1.- Update Installation Kit
 - 2.- Consideration of realistic requirements from application side
- Months 31-36
 - 1.- Final testbed with integration of applications

5. NETWORK SUPPORT AND QOS

5.1 QUALITY OF SERVICE

The first point to be faced is to identify the network topology of all testbed sites in order to investigate the possibilities of establishing QoS over the real networks. To do that we need to contact our Network Providers: they have to allow us to do it.

In the Spanish case we have to take profit of the participation of RedIris (the Spanish Academic Network) in the CrossGrid Consortium. The RedIris experts can report the last progress in their activities at the level of the QoS.

People from CESGA are looking at MPICH-GQ, a QoS implementation of MPICH.