



Can MediGrid Benefit from D-Grid?

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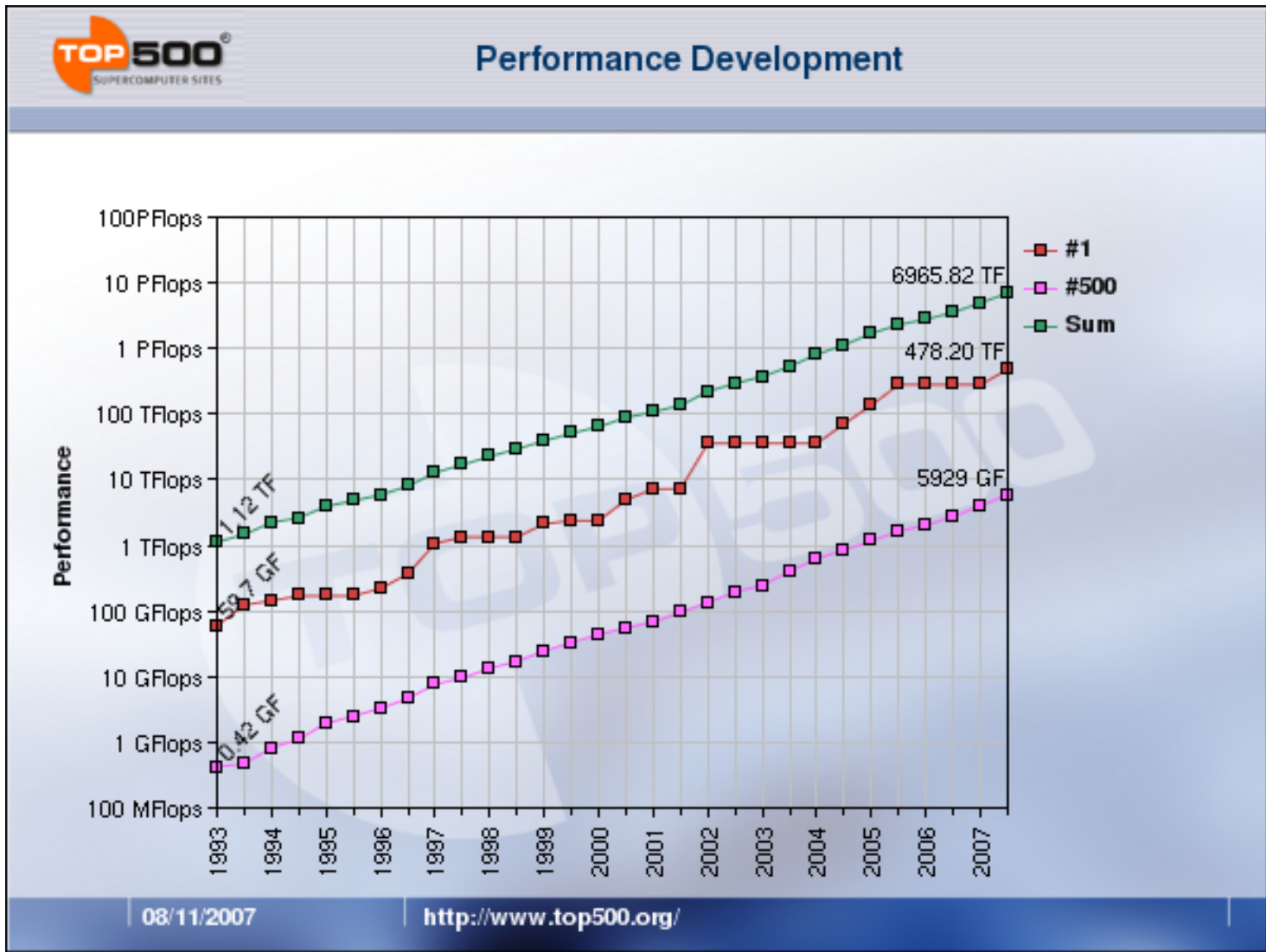
Berlin

January 22, 2008



IT in the Medical Community

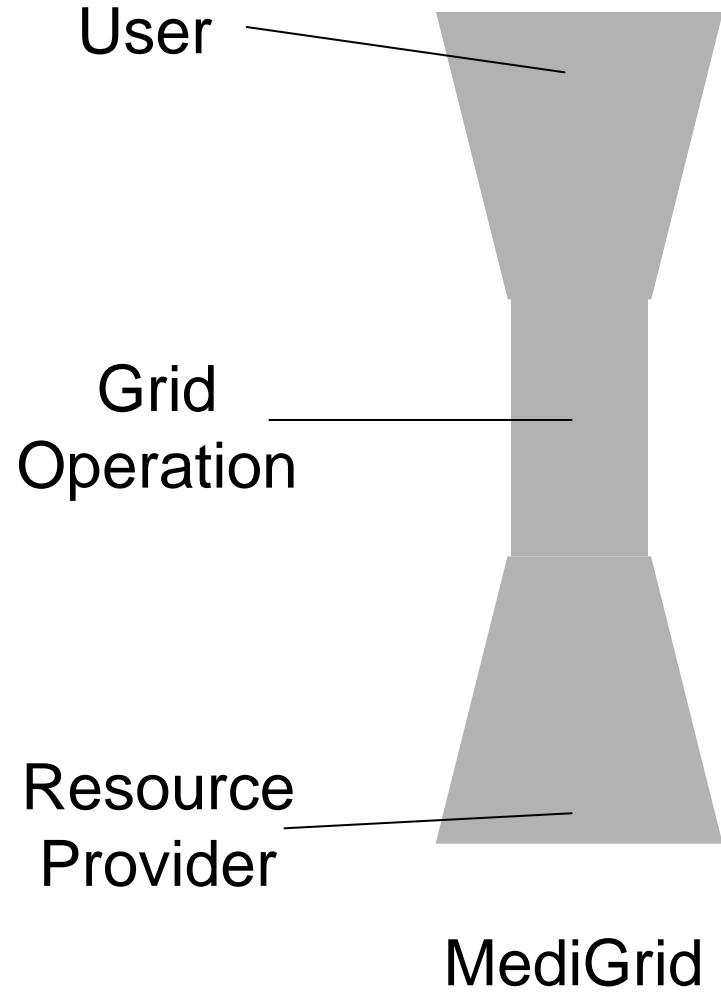
- Increasing use of information technology in medical application and medical research
- Performance development does not match demand.
 - Compute resources
 - Data resources
 - Special devices



- Increasing use of information technology in medical application and medical research
- Performance development does not match demand.
 - Compute resources
 - Data resources
 - Special devices
- Local operation of IT infrastructure is not always efficient.
 - Large contribution of fixed expenses
 - System administration
 - Training
 - Very expensive special devices
- Global availability of data is required
 - Pattern matching
 - Comparable cases
- Fast access in critical situations
 - Situations with peak demand are possible

- Efficient operation of resources in different centers
 - Size benefits
 - Power efficiency
 - Administration efficiency
 - No dependence on a single center
 - Redundancy in case of disasters
 - Load balance
- General access from many (all) sites
 - Community agreements
 - Reduced individual site negotiations
 - Increased flexibility
 - Software standardization is required
 - Problems with legacy software

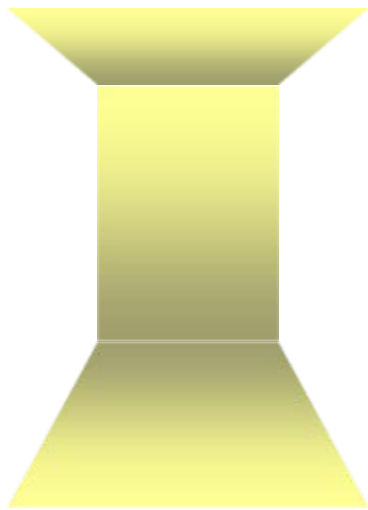
Can MediGrid be Autonomous?



- A large number of Grid users
 - Medical universities
 - Hospitals
 - Resident doctors
- A large number of compute centers with experience
 - Compute centers in medical universities
 - Compute centers in hospitals
- Operation of the Grid infrastructure
 - Another task of the TMF?
 - Distributed operation by a few large centers
- Development and research
 - Universities
 - Companies



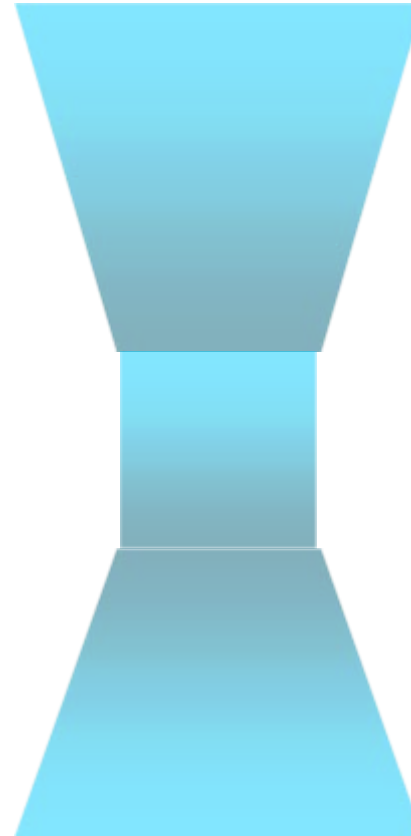
Grid Communities



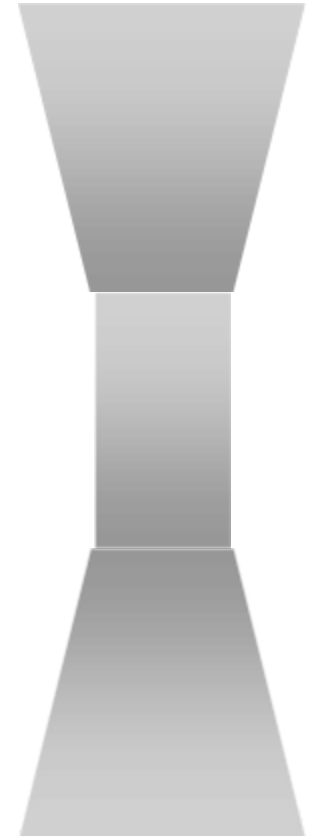
Commercial Grid



C3-Grid



HEP-Grid



MediGrid

- Many scientific and commercial disciplines face an increasing IT demand.
 - Similar situation as in MediGrid
- Constraints may be significantly different.
 - Security
 - User IT knowledge
 - Number of users
 - Type and number of jobs
 - Type and amount of resources
 - Legal and business constraints
 - Organizational structure
 - International relations
- Copying of community Grids does not work!

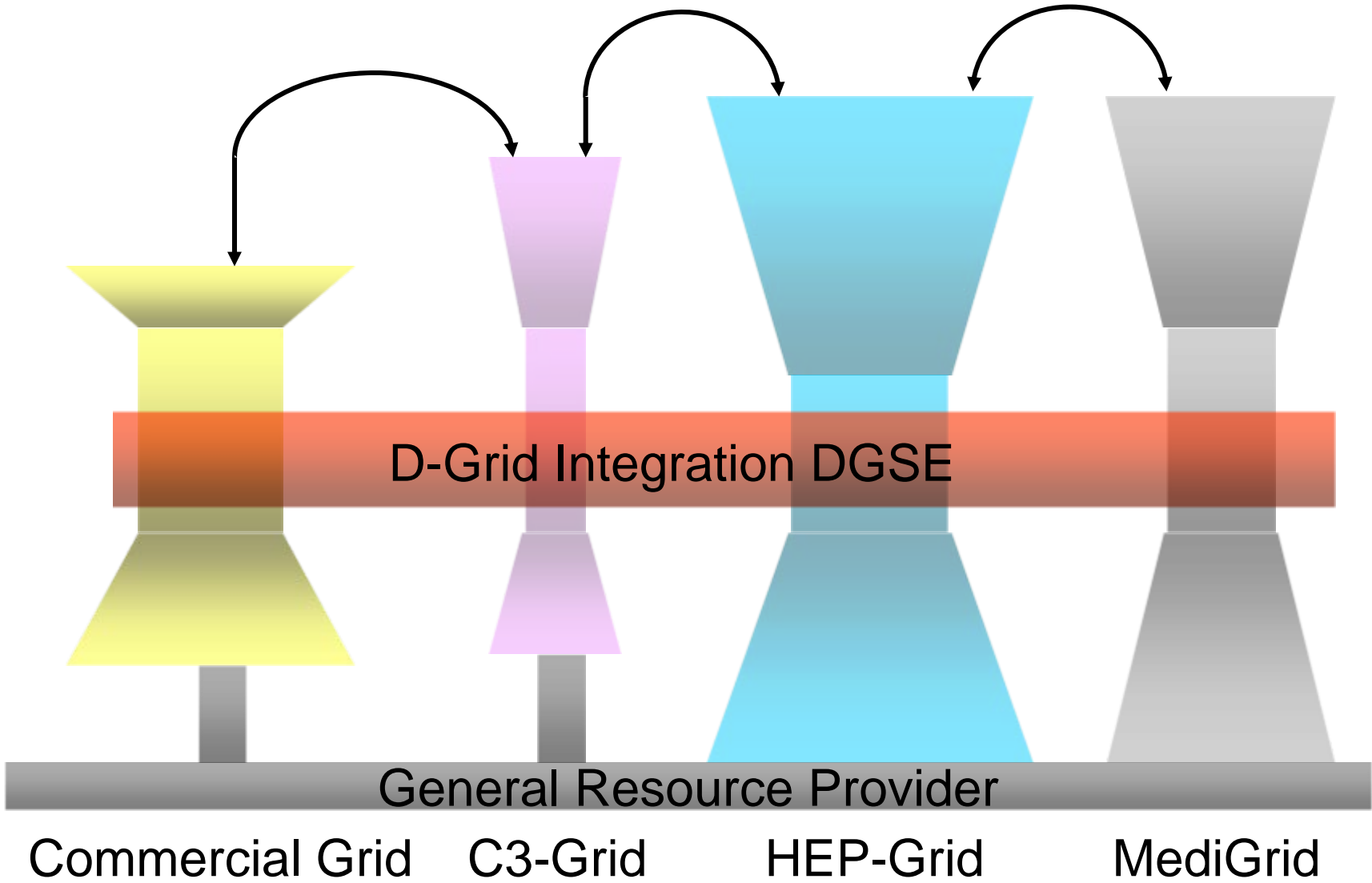


Cooperation of Grid Communities

- Cooperation may provide significant benefits.
 - Resource sharing
 - Handling of peak demands
 - Use of data bases across disciplines
 - Disease and environmental data bases
 - Users may belong to more than one discipline.
 - Climate and medicine
 - User do not want to use several isolated systems
 - Sharing of experience
 - Grid systems are not yet mature.
 - Common training
 - Basic user and administrator training
 - Common research and development activities
 - Employment of specialists



D-Grid





Common Tasks

- Maintenance of Grid middleware components
- Basic training of users and administrators



Startseite

Bereitstellung von Ressourcen

Grid-Server-Zertifikate

Grid-Middleware (Server)

Referenz-Installation

UNICORE

Globus

gLite

SRM/dCache

OGSA-DAI

Anbindung an Ressource- und User-Management

Konfiguration von Firewalls für Middleware

Einbinden in das Monitoring

Bereitstellung von Ressourcen > Grid-Middleware (Server)

Grid-Middleware (Server)

Bevor eine Compute Ressource oder Speicher Ressource bereitgestellt werden kann, muss ein gültiges Grid-Server-Zertifikat für den Server vorhanden sein.

=> Info zu [Server-Zertifikaten](#).

Grid-Middleware (Server)

Der Zugriff auf Grid-Ressourcen geschieht über Grid-Middleware, deren Server-Komponenten auf der Ressource installiert werden müssen, um eine Ressource verfügbar zu machen.

Die folgende Grid-Middleware wird im Kern-D-Grid für Compute-Ressourcen unterstützt:

- ◆ UNICORE
- ◆ Globus
- ◆ gLite

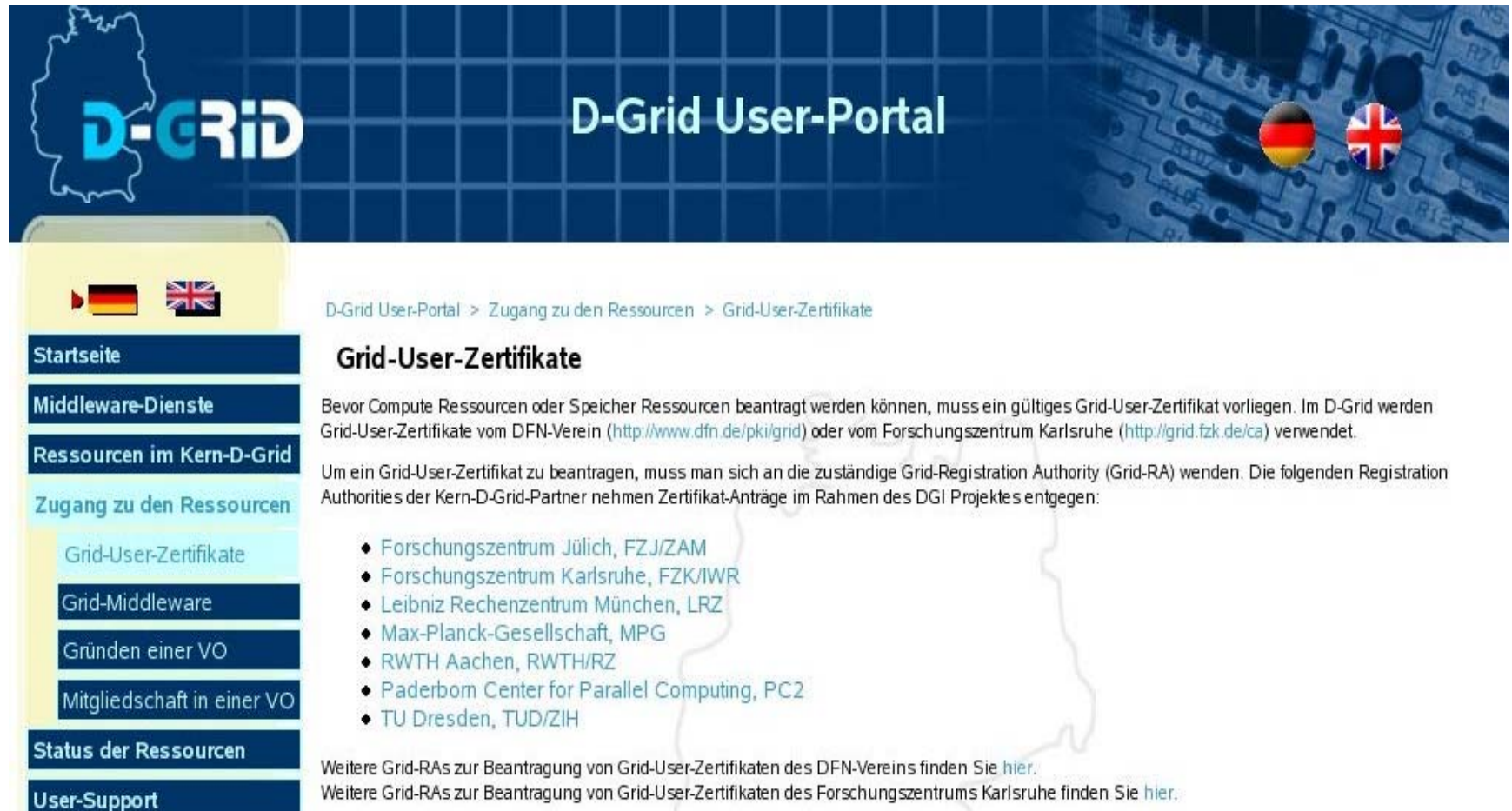
Die folgende Grid-Middleware wird im Kern-D-Grid für Speicher-Ressourcen unterstützt:

- ◆ SRM/dCache
- ◆ OGSA-DAI

Auf den Compute-Ressourcen der Sonderinvestition des BMBF müssen UNICORE, Globus und gLite parallel installiert werden. Auf den Speicher-Ressourcen der Sonderinvestition muss SRM/dCache oder OGSA-DAI installiert werden. Eine detaillierte Beschreibung einer [Referenz-Installation](#) mit einer Parallelinstallation von [UNICORE](#), [Globus](#), [gLite](#) sowie [OGSA-DAI](#) gibt es hier:

- ◆ [Referenz-Installation](#)

- Maintenance of Grid middleware components
- Basic training of users and administrators
- Information on new developments in Grids
- Basic components of Grid operation
 - Management of virtual organizations
 - User certification and authentication systems
 - Grid emergency response management



D-Grid User-Portal

D-Grid User-Portal > Zugang zu den Ressourcen > Grid-User-Zertifikate

Grid-User-Zertifikate

Bevor Compute Ressourcen oder Speicher Ressourcen beantragt werden können, muss ein gültiges Grid-User-Zertifikat vorliegen. Im D-Grid werden Grid-User-Zertifikate vom DFN-Verein (<http://www.dfn.de/pki/grid>) oder vom Forschungszentrum Karlsruhe (<http://grid.fzk.de/ca>) verwendet.

Um ein Grid-User-Zertifikat zu beantragen, muss man sich an die zuständige Grid-Registration Authority (Grid-RA) wenden. Die folgenden Registration Authorities der Kern-D-Grid-Partner nehmen Zertifikat-Anträge im Rahmen des DGI Projektes entgegen:

- ◆ Forschungszentrum Jülich, FZJ/ZAM
- ◆ Forschungszentrum Karlsruhe, FZK/IWR
- ◆ Leibniz Rechenzentrum München, LRZ
- ◆ Max-Planck-Gesellschaft, MPG
- ◆ RWTH Aachen, RWTH/RZ
- ◆ Paderborn Center for Parallel Computing, PC2
- ◆ TU Dresden, TUD/ZIH

Weitere Grid-RAs zur Beantragung von Grid-User-Zertifikaten des DFN-Vereins finden Sie [hier](#).
 Weitere Grid-RAs zur Beantragung von Grid-User-Zertifikaten des Forschungszentrums Karlsruhe finden Sie [hier](#).

Navigation: Startseite, Middleware-Dienste, Ressourcen im Kern-D-Grid, Zugang zu den Ressourcen (Grid-User-Zertifikate, Grid-Middleware, Gründen einer VO, Mitgliedschaft in einer VO), Status der Ressourcen, User-Support



D-Grid Virtual Organisations

Each VO is administrated via a VOMRS-server.
To join a VO please use the link under "Member Registration".

D-Grid-VOs				
VO	Short Term	Member Registration	joined Resources	VO-Representative
medigrid	md			ulrich sax juergen falkner
astrogrid	as			harry enke
c3grid	c3			bernadette fritzsch benny braeuer
ingrid	in			
textgrid	tx			andreas aschenbrenner peter gietz christoph ludwig
wisent	ws			ludger bischofs
hepcg	hp			peter malzacher
dgtest	dt			christa dohmen
kemdgrid	kg			christa dohmen
viola	vi			thomas eickermann

- Maintenance of Grid middleware components
- Basic training of users and administrators
- Information on new developments in Grids
- Basic components of Grid operation
 - Management of virtual organizations
 - User certification and authentication systems
 - Grid emergency response management
- Second level support



[D-GRID](#) · [Support-Home](#) · [Submit ticket](#) · [Support staff](#)

Tickets @ D-GRID

▶ Submit [new ticket](#)

Tickets from Thomas Fieseler (access via certificate)

ID	Status	Date	Info
4	new	2006-02-13	Test

Open tickets of all users

ID	VO	Date	Info
18	dgi	2006-05-10	Zertifikat-Import in Unicore-Client
7	none	2006-02-13	echte E-Mail an DGUS
6	none	2006-02-13	Ticket via E-Mail-Interface
5	none	2006-02-13	Ticket via E-Mail-Interface
4	dgi	2006-02-13	Test

▶ Search [solved ticket](#)

Latest news

D-Grid

- ◆ [D-Grid-News](#)

Statusseiten im D-Grid

- ◆ [WebDMS](#) (GLOBUS Monitoring im Kern-D-Grid)
- ◆ [Site Functional Tests report](#) (LCG)
- ◆ [dCache Service](#) (Jülich)

- Maintenance of Grid middleware components
- Basic training of users and administrators
- Information on new developments in Grids
- Basic components of Grid operation
 - Management of virtual organizations
 - User certification and authentication systems
 - Grid emergency response management
- Second level support
- Consulting (operations, software selection, business)
- Initiation of research on common open problems
- Provision of testbeds

- Initial start through Government funding
 - Total funding of D-Grid so far: almost 70 Mio€
 - Grid funding will cease within 3 years.
- D-Grid GmbH must be funded by communities afterwards.
 - Communities determine the required services.
 - Generation of a modification process for the portfolio
 - Community differences must be honored.
 - Variety of support packages
- Distributed support
 - Large centers or companies provide the actual support.
 - Coordination by the D-Grid GmbH
 - Selection of support provider
- No provision of resources
 - Compute centers and/or companies

- Integration of the projects into one concept
 - MediGrid
 - Services@MediGrid
 - MedInfoGrid
- Definition of a business concept
 - Market, value proposition, value chain, revenue model
 - Consideration of existing structures
- Identification of partners
 - National or international
- Definition of a roadmap