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Towards Deployment of EMIR in Federated Grid Infrastructures

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Description of the work

The National Grid Infrastructures (NGI) in EGI are autonomous in nature and based on heterogeneous Grid middlewares. The lack of common decentralized service discovery would enforce NGI or EGI operators to manage multiple middleware specific registries. Alternatively a centralized indexing registry has to be setup, which however could easily become a bottleneck and susceptible to single point of failure. The EMI's EMIR offers a distributed service registry which has been developed using the concept of independent NGIs, whereby each EMIR server instance can be deployed on each participating site and can be connected to top level NGI, thus forming a hierarchical network of EMIR registries. Furthermore all the participating middleware services can be indexed in a controlled fashion while deciding which services should (or should not) be available at the ancestor registries. While the federations such as EGI could leverage it from setting up the global EMIR registry which offers robustness while replicating among other global EMIR registries.

Wider impact of this work

It is indispensable to have autonomous service registries which enables robust mechanisms to discover the services in federations like EGI. The talk will primarily focus on proposed deployment scenarios of EMIR in EGI and NGIs.

Printable Summary

In modern Grid infrastructures where multi-middleware services exists,a unified mechanism to service discovery is fundamental.These services often belong to specific type of middleware,therefore a number of (middleware) specific service registries has to be setup to enable service look-up and discovery.Within EMI,a common service registry (EMIR) has been developed which offers a unified mechanism of discovering the federation wide heterogeneous Grid services.This however relieve the operators from configuring and deploying existing/emerging service registries.The EMIR has been designed to create distributed registry infrastructure,where multiple EMIR servers can be connected hierarchically and/or in P2P fashion to offer robust Grid wide service discovery.

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