Contribution ID: **6**   Type: **Extended Presentation (25' + 5' for questions)**

Using Dynamic DNS for dynamic service deployment, migration and high availability

Thursday 13 October 2022 14:15 (30 minutes)

The Dynamic DNS service at IISAS provides a unified, federation-wide Dynamic DNS support for virtual machines in EGI Cloud infrastructure. Users can register their chosen meaningful and memorable DNS host names in given domains (e.g. my-server.vo.fedcloud.eu) and assign to public IPs of their servers.

The main features of Dynamic DNS service are as folllows:

- **Simple usage:** Users should be able to register a hostname and assign it to a server (desktop, local server, virtual machine in Cloud) in two minutes. See the demonstration video in the fedcloud.eu YouTube channel for a proof.

- **Independent:** do not require additional software installation, nor additional support from Cloud providers or site administrators.

- **Universal:** hostnames could be applied for services/VMs deployed anywhere, including local servers, private Clouds, academic Clouds or commercial Clouds. That feature is very useful for service migration from local servers to Cloud or from a cloud provider to another.

- **User-friendly:** end-users can access services or virtual machines deployed in Clouds with pre-registered, meaningful and memorable hostnames instead of IP addresses.

- **Security and privacy:** with proper hostnames users are allowed to get valid SSL certificates for the services deployed in the Cloud.

One of the most interesting usages of Dynamic DNS service is service migration and high availability. The service enables easy migration of users' services from one Cloud site to another within one minute. That can be used also for designing high availability, where the service endpoint may be switched from the faulty service instance to the healthy one automatically and dynamically by monitoring.

The Dynamic DNS service is available at https://nsupdate.fedcloud.eu/.

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Session Classification: IBERGRID Contributions

Track Classification: Development of innovative software services