

GRNET Simple Storage

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- What is GSS?
- User Functionality
- GUI Preview
- Technical Details
- Future steps

- Stands for **GRNET Storage Service** (gss.grnet.gr/gss)
- Provides a virtual disk (storage) accessed over the network
 - Users are able to upload, share, and index their files
 - Inspired by Amazon S3, but going beyond...
- Targeting research & academic community
 - Up to > 300,000 users
- Funded by the national project HellasGrid (www.hellasgrid.gr)
 - Implemented by EBS (www.ebs.gr)

- GSS offers users a file system abstraction, complete with file/folder hierarchical structures
- Basic functions
 - Usual file system operations, e.g. copy, move, etc.
 - Delete plus “trash-bin” functions
 - 10GB free space per user, easily extendible
- Advanced functions
 - File sharing with selected users, user groups or public
 - Automatic file versioning, e.g. keep history of the file
 - Text search and tagging capabilities for file names or folders
 - Shibbolized authentication, aka no need for extra credentials
 - Access over IPv6, aka future proof 😊

The screenshot shows the GRNET Storage Service interface in Mozilla Firefox. The browser address bar contains `http://gss.grnet.gr/gss/`. The interface includes a search bar, a file list, and two property dialog boxes. Annotations in red text highlight various features: **Secure Web Access** (address bar), **Search Capabilities** (search bar), **User Credentials** (username), **Available Resources** (storage space), **File Sharing** (shared folders), **Flexible File Naming** (file name), **Properties** (file properties dialog), **Versioning** (versions tab), **Public access (if enabled)** (URI field), and **IPv6 Support** (IP address in status bar).

Secure Web Access

Search Capabilities

User Credentials

Available Resources

File Sharing

Flexible File Naming

Properties

Versioning

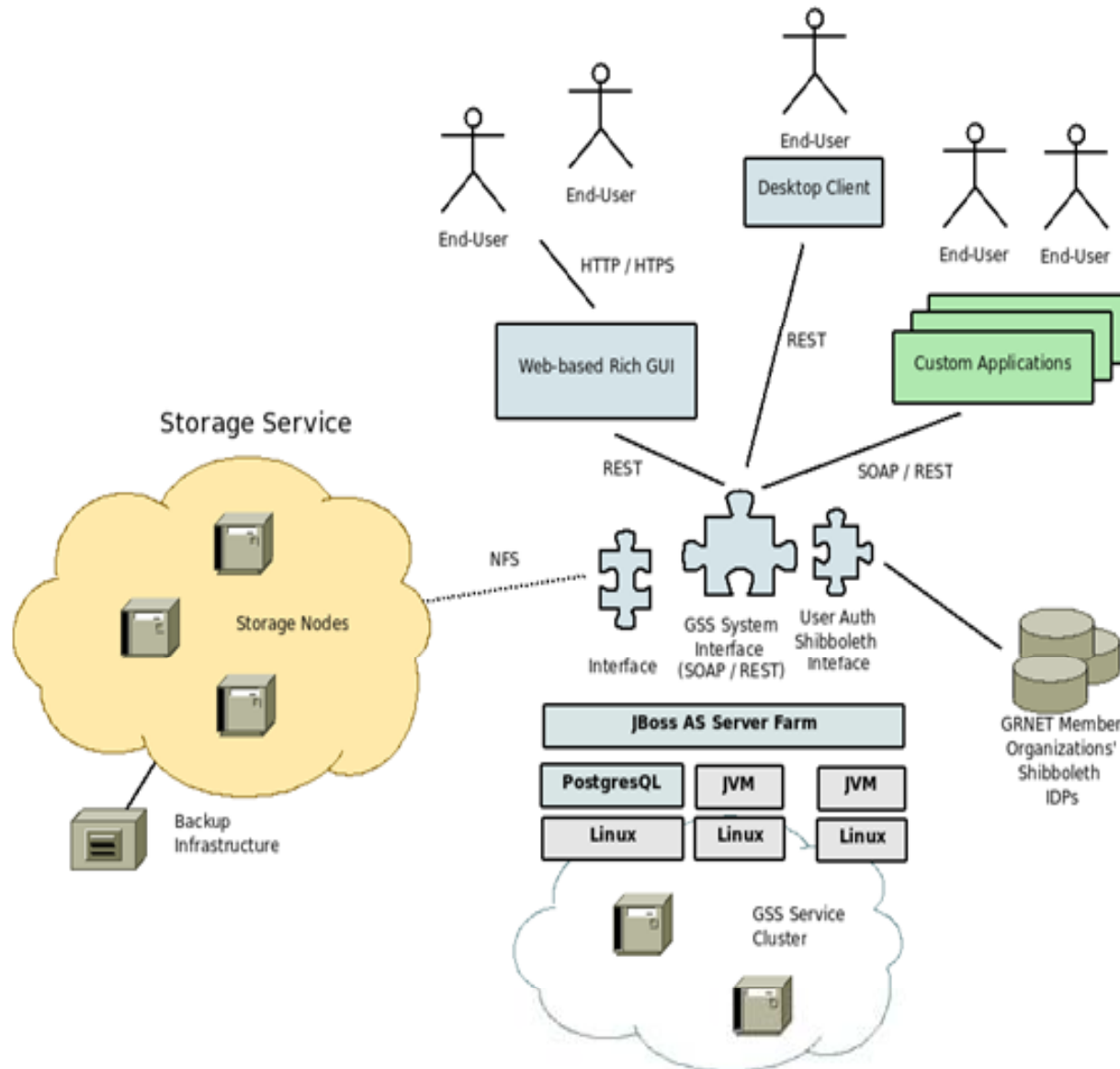
Public access (if enabled)

IPv6 Support

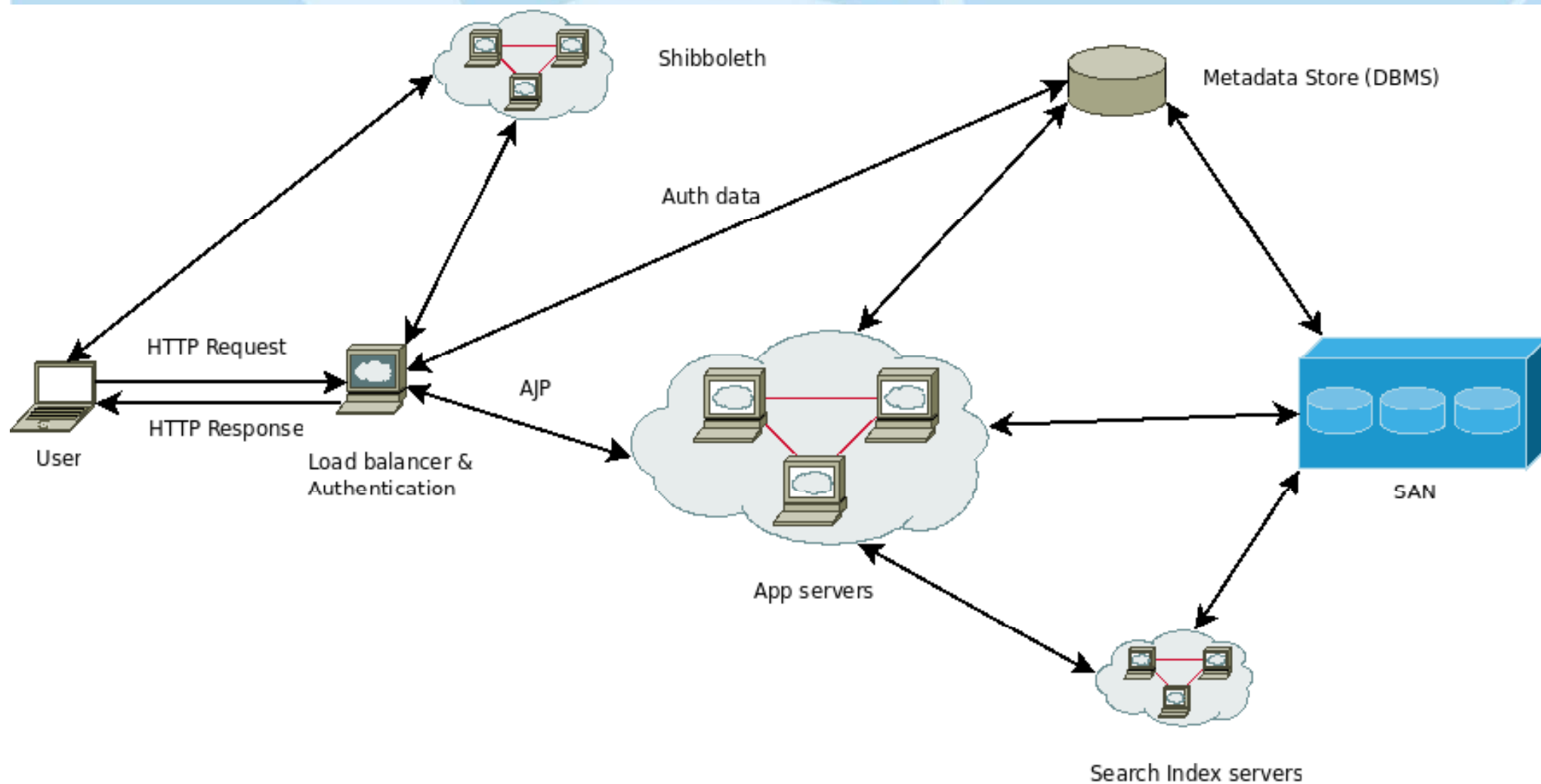
Name	Owner	Version	Size	Date	2 files
Test doc1.pdf	Athanasios C. Liakopoulos	1	277.445 KB	6/2/2009	
Αρχείο 1.pdf	Athanasios C. Liakopoulos	1	78.604 KB	6/2/2009	

Version	Created	Modified	Size
1	06/02/2009 : 11:22	06/02/2009 : 11:22	78.604 KB

- All GSS functionality provided on the application layer via application server farms
 - Implemented in Java, dual stack (IPv6)
- Multiple access interfaces
 - Direct API (REST), web-based client (AJAX), desktop client (Tcl/Tk), WebDAV.
- Use Shibboleth (shibboleth.internet2.edu) for AA
 - Use student credentials from university catalogues
- Infrastructure
 - 12 servers (IBM x3550, 2.0 GHz 16GB RAM), SAN (140TB, SATA disks), 10Gbps connection (to GRNET backbone)



- Cluster of GSS servers (handling main functionality and APIs)
- Solr server(s) (for indexing and search functionality)
- DB server (for storing meta-data)
- GUI web clients



- Complete beta testing
 - Complete by April '09
- Performance testing
 - On going process
- Enrich functionality
 - Open source effort <http://code.google.com/p/gss/>
 - Take advantage of REST API for third-party applications
- Extend infrastructure according to usage