



GRNET SERVICE BOX

George Thanos, GRNet

Email: gthanos@grnet.gr

Faidon Liampotis, GRNet

Email: faidon@grnet.gr

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WHAT IS THE GRNET SERVICE BOX?

- GRNet Service Box is a 1U server that is delivered free of charge to the Greek academic institutes.
- GRNet Service Box has a set of pre-installed services that suites the needs of most academic institutes.



SERVICES DELIVERED BY THE GRNET SERVICE BOX

- Directory Service based on Sun DS 5.x.
- Shibboleth IdP 1.3 based on Apache 2.2 web server and Apache TomCat.
- RADIUS server based on FreeRADIUS.
- VPN service based on OpenVPN.
- VoIP Services
 - H.323 GK based on GnuGK.
 - H.323 to SIP gateway using Asterisk.

WHY GRNET BUILT THE SERVICE BOX IDEA?

- Many institutional NOCs do not have the required technical expertise to deploy advanced networking services.
- Many Greek academic institutes are rather small, with an analogously limited NOC in terms of human resources.
- Institutional NOCs do not afford the resources to build and maintain advanced networking services.
 - Directory services
 - Authentication and authorization services.
 - SSO services.



THE GRNET APPROACH REGARDING SERVICE DEPLOYMENT (1/2)

- Academic institutes should be able to deploy network enabled services seamlessly.
- Institutes should not necessarily afford the technical expertise required to setup and maintain those services.

THE GRNET APPROACH REGARDING SERVICE DEPLOYMENT

(2/2)

- Local administrators should focus on the daily operations of the service and not on their technical intricacies.
- Rapid and seamless service deployment should be the final goal.

BUILD AND MAINTAIN SERVICES CENTRALLY WITHIN NREN

- In those cases that academic institutes cannot deploy the services in-house, NREN can setup and maintain those services centrally.
- GRNet has built the Service Box platform, which can deliver a minimum set of services to any institute:
 - Institutes must always choose which services they want to deploy using the GRNet Service Box and which they will deploy on their own.

GRNET SUPPORT SERVICES TO LOCAL ADMINISTRATORS

- GRNet delivers and provides technical support for all GRNet Service Boxes including
 - Software updates and security patches.
 - Uniform service administration.
 - Technical consulting
 - how to deploy the services using the box.
 - how to administer them.

BUILDING A USER COMMUNITY AROUND GRNET SERVICE BOX

- Consistent effort from GRNet to create a user community of local administrators.
- Local administrators can mutually provide support to each other.
- The GRNET Service Box mailing list is active, but there is not significant participation.



SERVICE MANAGEMENT USING GRNET SERVICE BOX USER INTERFACE (UI)

- Every GRNet Service Box has a web based configuration interface for local administrators.
- Using UI, administrators can easily configure
 - the networking parameters of the server.
 - IP address, subnet mask, default gw, DNS.
 - Directory Service and Shibboleth IdP parameters.
 - Free Radius and OpenVPN service.
 - H.323 gkp and H.323toSIP gateway parameters.



MANAGING DIRECTORY SERVICE CONTENT (1/2)

- Provide a UI that the administrative staff can add/delete/modify users and user groups (ou).
- An internet portal administers centrally all the Directory Content of the GRNet Service Boxes.
- The directory management UI is not stable enough and suitable for heavy use.

MANAGING SUN DIRECTORY SERVICE 5.X

(2/2)

admin  [Αναζήτηση / Διαχείριση](#)  Προσθήκη  Μαζικές Λειτουργίες  Στατιστικά  Επιστροφή  Έξοδος

Προσθήκη Νέου Χρήστη (Λατινικούς Χαρακτήρες)

Όνομα (givenName)	<input type="text"/>	υποχρεωτικό
Επώνυμο (sn)	<input type="text"/>	υποχρεωτικό
Πλήρες Όνομα (cn)	<input type="text"/>	υποχρεωτικό
User ID (uid)	<input type="text"/>	υποχρεωτικό Έλεγχος Χρήστη
e-mail (mail)	<input type="text"/>	υποχρεωτικό
eduPersonPrincipalName (eduPersonPrincipalName)	<input type="text"/>	υποχρεωτικό
Κωδικός Χρήστη (userPassword)	<input type="text"/>	υποχρεωτικό, >5 χαρακτήρες
Αντιγραφή από χρήστη (Εισάγετε το User ID)	<input type="text"/>	Έλεγχος Χρήστη
Δημιουργία στο OU	<input type="text" value="ou=People"/>	

Εγγραφή

Προσθήκη Νέου OU

Όνομα	<input type="text"/>
Δημιουργία στο OU	<input type="text" value="οπουδήποτε"/>

Προσθήκη

MANAGING SHIBBOLETH IDP 1.3 USING UI

- Institute administrators cannot configure any ARP policy using the UI (feature to be implemented).
- GRNet administers the ARP of all Service Box IdPs.
 - We use a uniform ARP for all boxes, which
 - Adheres to the Shibboleth principal of exposing only the absolutely required user related information.
 - Matches the SP requirements.
- Institute administrators cannot differentiate themselves from this policy, unless they edit ARP.xml.

ANALYSIS OF THE PROJECT CHALLENGES

- The complex part of the project is the administration UI.
- The UI should be flexible and powerful enough to support a wide variety of services and user levels.
 - UI should be modular to add services on demand.
- Marketing to institutes is very important.
 - We have to convince institutes about the seamless deployment and added value of the end result.

RE-ENGINEERING THE GRNET SERVICE BOX UI – FEATURES TO BE SUPPORTED (1/2)

- Provide more flexibility in terms of configuration options to the local administrators.
- Provide multilingual support for the Service Box UI.
- UI views should be exportable to any CMS.
- UI should deliver configuration options to the end user (i.e. user based ARPs)
- Shibboleth auth/authz for operators and end-users.

RE-ENGINEERING THE GRNET SERVICE BOX UI – FEATURES TO BE SUPPORTED (2/2)

- Three user-level support
 - Administrators level.
 - Service operator level (managing directory content).
 - End-user level (ability to change personal preferences).
- UI should be easy to use and self explanatory enough for the non-technical oriented users.
- UI should be modular to add/remove services on demand.
- The UI project should be based on an well established MVC framework (Apache Struts, Apache Tapestry, Ruby on Rails etc)



ISSUES FOR FURTHER DISCUSSION...

- Does the Service Box provides added value to the academic institutes?
- Should we offer more services on the box?
 - Which additional services?
- Are other NRENs eager to deploy a similar concept?
- Can Service Box be an inter-NREN collaboration project?
- Should we deliver a VM/Xen image instead of a physical machine?

Questions?

George Thanos

e-mail: gthanos@grnet.gr

Faidon Liampotis

Email: faidon@grnet.gr

