Improving Infrastructure, Service and Knowledge by “Campus Best Practices” Model

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* Some slides from UNINETT GN3/ NA3/T4 task members
University of Belgrade – since 1808

- University has been constantly developing, thus turning into the biggest and oldest higher education institution in the region consisting of
  - 31 faculties,
  - 10 scientific research institutes,
  - University Library,
  - six University Centers,
  with almost
  - 80000 students and
  - 7000 professors, researchers and teaching associates, who comprise the major part of the educational and scientific potential of Serbia.
University of Belgrade Computing Centre

- Technical department of UoB known as **RCUB** responsibilities
  - central infrastructure and operational node in NREN of Serbia
  - MAN in Belgrade
  - Campus area within Belgrade
- **IT staff in member institution (faculties and research institutes)** responsible
  - LAN and service in their buildings, i.e. campuses
The GÉANT projects

- 40 European countries
- 93 million Euro funding from EC
- Divided into 45 tasks

Objective
- Enable research communities across Europe to transform the way they collaborate
- Enhance networks and services
- Fight the “digital divide” across Europe

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Campus Best Practices - continues in GN3+

- From April 2013 – nine countries:
  - Norway (UNINETT)
  - Finland (CSC/Funet)
  - The Czech Republic (CESNET)
  - Serbia (AMRES)
  - France (RENATER)
  - Portugal (FCCN)
  - Bulgaria (BREN)
  - Montenegro (MREN)
  - Macedonia (MARNET)
Campus Best Practices - a task within GN3 project

- Four countries:
  - Norway (UNINETT)
  - Finland (CSC/Funet)
  - The Czech Republic (CESNET)
  - Serbia (AMRES)
- 3.5 man years per year

Objective

- Address key challenges for campus networks
- Organise working groups
- Provide best practices
- Disseminate results across Europe
Motive - improve the deployment of key services in campuses

- Upgrade campus infrastructure, their services and its local IT expertise
  - NREN occasionally organize activities to help campuses

- Is there any **organizational model** such that
  - Continually carried out in NREN
  - Campuses can count on the support
  - Involves the campuses

- The need for such model increases
  - End-to end services
  - Synchronize the development of the network segments under the different scope of responsibilities - NREN and/or campuses
Initial step - facilitate campus community to exchange experiences

- Key idea “community building”
  - It is not enough to connect networking dev
  - Encourage Cooperation between:
    (not just) campus – NREN
    campus – campus (also)

- Organize a WORKSHOP
  - Way to invite the widest range of people
    from research and education institutions
  - Explain basic concepts
    working groups
    Campus Best Practice Documents
  - Introduction to step 2 => Establish an inner core of contributors

Community building takes time
An example of useful cooperation: eduroam

- Thousands of universities across Europe...
  - Same ICT challenges and questions (more or less)

- How do we set up eduroam?
  - Radio planning
  - Wireless controller setup
  - Security
  - Encryption (802.1X)
  - Radius setup
  - User database integration (AD/LDAP/other)
  - Certificates (CA)
  - Supporting smart phones / tablets
  - Monitoring
  - etc, etc

- Can we learn from others?
Campus Best Practices
Working groups

- Provide an arena for people working with similar technical campus challenges
- Present and discuss challenges and solutions (in local language)
- Six areas of focus:
  - Physical infrastructure
  - Campus networking
    - IPv6, ligthpaths
  - Wireless infrastructure
  - Network monitoring
  - Security
  - Real-time communications
- Discuss best (and worst) practices
  - Input for Best Practice Documents
Best Practice Documents

How are they produced?

- Initial draft - facilitate by NREN
- Iteration until rough consensus in working groups
- Open hearing period (of minimum 4 weeks)
- Approved by IT director at University
Campus Best Practice Model in GEANT - 3 step Staircase

- Best Practice Documents are the most visible results of Campus Best Practice Model
- GEANT focus - on the three blue levels
- There are …
  - … more steps
  - … another results

1. Workshops to share experiences
2. Working groups discuss best practices
3. Make own national best practices
If intend to set up a national activity
- Follow the Campus Best Practice 6 step Staircase
- Move to the next level when ready for
  - budget support
  - mature community

1. Workshops to share experiences
2. Working groups discuss best practices
3. Make own national best practices
4. Common national procurements
5. Active counselling on campus
6. Assist implementations on campus
Campus Best Practice Activities in Serbia

- Before GN3/NA3/T4
  - 4 of 6 step carried out occasionally
  - campuses can not rely on continuous NREN activity
  - no experiences with two key activities – no joint effort on production of BPDs in NREN of Serbia

- Initial Challenges:
  - Explaining idea of WG and BPD to community
    - Use solutions that fit to own situation
  - Selecting area of interest and subjects of first BPDs
Selecting area of interest

- Criteria – needs, experience, interest for
  - Physical Infrastructure:
    - Urgent and/or continual improvements needed (in parts of NREN network)
    - Benefit from UNINETT experience:
      - Cabling, Requirements for data centers and network rooms, Cooling and Powering
  - NMS
    - NMS tools & Previous Effort in Campuses
  - Security
    - Raise the common level of security within the network
    - Wide area of topic (firewalls, CERT, AAI)
Selecting the subject of BPDs (cont.)

- Remarks about the subject:
  - Areas which need continual improvements, such as phy topic, email spam, filtering, network monitoring …
    - *WG members can contribute to national BPDs*
  - Areas in which NREN is not yet developed but keeping pace with in others, such as eduroam, and wireless, IPv6 …
    - *WG members must gather some experience to be able to contribute*
    - “*Is there some BPD about …?*”
  - Area which is still under development and where different approaches are possible – several current practices instead of best practice, such as AAI topic
Recommendations regarding the initial steps

- Do not have to be ambitious at the beginning (just start)
- Benefit from other NRENs experience, use already prepared BPDs
- Can try with existing BPDs and try to discuss
  - If it covers your needs in a proper way
  - How to change it and adopt it to your situation
- Gain proper understanding and support for campus activities in NREN
Getting Support for Campus Best Practice Activities in Serbia

- Activities towards the campuses – adopted through GEANT project
- Facilitator – Dedicated campus project team - can be:
  - NREN
  - Consortium of Universities
- Proliferate idea to other Stakeholders
  - Campus level participants
  - Government and Funding Bodies
Best Practice Documents
Published in English and Serbian

- Find on the page with all Campus Best Practice documents
  - http://www.geant.net/cbp/
  - http://www.terena.org/campus-bp/
  - Currently 58 documents available
- Announcements of new documents:
  - campus-bp-announcements@terena.org
- Version in Serbian on
  - https://www.bpd.amres.ac.rs/
- Campus Best Practice Team:
  - gn3campus@uninett.no
Area of focus and the CBP toolkit (GN3/NA3/T4) 58 documents published

- **Physical Infrastructure (9)**
  - Cabling, power, cooling, AV, etc

- **Real-time comm. (5)**
  - IP telephony and SIP

- **Wireless (7)**
  - Including eduroam deployments

- **The campus network (10)**
  - The network itself, including IPv6 deployment

- **Network monitoring (9)**

- **Security (4)**
Dissemination – efforts so far (GN3/NA3/T4)

- Organise workshops at the **European level**
  - Network monitoring
  - Real-time communications
  - IPv6
  - Wireless

- Organise workshops at the **National level**
  - Macedonia
  - Slovenia
  - Lithuania
  - France

- Present papers at **conferences**
  - European conferences (TERENA, EUNIS, IEEE)
  - National conferences (France, Denmark, Croatia, Romania…)

[Image of a slide with the above content]
Thank you!