TF-NGN AAA research

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Multi Kingdom Problems

Physics-UU to IPP-FZJ => 7 kingdoms

- Netherlands
  - Physics dept
  - Campus net
  - SURFnet

- Europe
  - TEN 155

- Germany
  - WINS/DFN
  - Juelich, Campus
  - Plasma Physics dept

USA line

3 ms

2.5 ms

17 ms

Juelich
The need for AAA

End user

Kingdom N

Kingdom N+1

Remote service

See IRTF AAA-ARCH Research group
Policy based networking example

Experiment

Pc

Policy based networking switch with > layer 4 AAA functionality

Macintosh

AAA

Camera
AAA Server building block

Rule example: Auth_A = (B>9) .or. C .and. D

Types of communication:
1: “The” AAA protocol
2: interface (API) to app specific module (addressing!)
3: interface (API or connection) to repositories (e.g. LDAP)
Generic AAA server
Rule based engine

Application Specific Module

Service

Policy

Events

Types of communication:
5: Towards service (f.e. COPS, CLI, SNMPv3)
AAA Server with Accounting as Part of the Service

1. Generic AAA server
   Rule based engine
2. Application specific Module
3. Policy
4. Events
5. Service
6. Accounting/
   Metering
7. Acct Data
AAA Server with Accounting as Separate Service

1. Generic AAA server
2. Rule based engine
3. Application Specific Module
4. Policy
5. Accounting Module
6. Events
7. Service
8. Acct Data
9. Metering
Questions

• Resource discovery <-> AAA discovery
• Is AAA high or low in middleware?
• All A's together or not?
• Should AAA be visible in the app or only stay in middleware and this way solve its user interface problem
Specific goals of the RG are:

- develop generic AAA model by specifically including Authentication and Accounting
- develop audibility framework specification that allows the AAA system functions to be checked in a multi-organization environment
- develop a model that supports management of a "mesh" of interconnected AAA Servers
- define distributed policy framework, coordinate with policy framework WG and others
- develop an accounting model that allows authorization to define the type of accounting processing required for each session
Specific goals of the RG are:

- implement a simulation model that allows experimentation with the proposed architectural models (also work on an emulation)
- describe interdomain issues using generic model
- work with AAA WG to align short term AAA protocol requirements with long term requirements as much as possible
- complete the work in Q4 - 2000 (ambitious)
- RFC 2903 - 2907 !!!!
• Research Group Name: AAAARCH - RG

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• Web page
  – www.irtf.org
  – www.phys.uu.nl/~wwwfi/aaaarch

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    » ftp://ftp.fokus.gmd.de/pub/glone/mail-archive/aaaarch-current
• Use European research net as testbed for AAA
• VLL type of service
• Top-down
  – Application
  – Middleware - AAA
  – BB
  – Policy push
  – Diffserv
• Focus on techniques and products
• Concentrate on
• Authentication, aggregation
• Authorisation
• SLA - policy - metering - verification
• Simulation/emulation