NMRG Status Report '2004

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NMRG History and Statistics

- First inofficial meeting in Lausanne November 1998

- Formally approved by the IAB in March 1999

- 17 meetings at various places since formation

- Produced four NMRG RFCs

- Involved in 15 other publications by NMRG members

- Spring-off activities
  - Editorial activities
  - Research projects

- Currently ≈ 100 subscriptions on the mailing list

NMRG Business Model

- Collaboration and discussion forum

- Bridging gaps between academia, industries, operators, standards developing organizations (SDOs), …
  - ○ Improve mutual understanding
  - ○ Participation of people from different SDOs to exchange viewpoints (ITU, CIM, W3C, IETF)

- Interactive meetings
  - ○ usually co-located with other events
  - ○ hosted by a supporting institution (low cost)
  - ○ originally intensive discussions of a given subject
  - ○ moved towards presentations followed by intensive detailed discussions

Finished NMRG Projects

- Terminology
  - Information Models vs. Data Models (RFC 3444)
- SNMP Evolution
  - TCP transport mapping (RFC 3430)
  - Compression (OID delta compression)
  - Protocol operations (`GetRange` PDU)
- SMI Evolution
  - SMIng (RFC 3780, RFC 3781)

$\implies$ SMI evolution moved to the IETF and back to the NMRG

$\implies$ SNMP compression / operations documents were never completed and have expired

Ongoing NMRG Projects

- Web Services for Management
  - Performance impact and comparison to SNMP
  - How to use Web Services for management?
  - Specification and interaction translation

- Understanding Management Interactions
  - Static analysis of MIB modules
  - Analysis of management agent behavior
  - Collecting traces of management interactions
  - Definition of common benchmarks

NMRG Experiences

- Bridging cultural differences between engineering and research is a non-trivial undertaking

- Interaction with people from other backgrounds (SDOs) takes quite some time but is extremely worthwhile

- IRTF / IETF relationship and the perception of each other is (at least related to network management) an issue

- Driving projects to completion is sometimes difficult

- Establishment of a network of people who know each other well enough to communicate efficiently is probably the main product of the NMRG

General IRTF Considerations

a) The IRTF needs to improve communication and awareness between research groups

b) The IRTF needs to improve its visibility in the research world

c) The Interface between the IETF and the IRTF needs consideration

d) The IRTF needs to develop mechanisms to measure the success/impact of research groups

References

[1] J. Schönwälder. Simple Network Management Protocol (SNMP) over Transmission Control Protocol (TCP) Transport Mapping. RFC 3430, TU Braunschweig, December 2002.

[2] A. Pras and J. Schönwälder. On the Difference between Information Models and Data Models. RFC 3444, University of Twente, University of Osnabrueck, January 2003.

[3] F. Strauß and J. Schönwälder. SMIng - Next Generation Structure of Management Information. RFC 3780, TU Braunschweig, IU Bremen, May 2004.

[4] F. Strauß and J. Schönwälder. Structure of Management Information, Next Generation (SMIng) Mappings to SNMP. RFC 3781, TU Braunschweig, IU Bremen, May 2004.

[5] A. Pras, T. Drevers, R. van de Meent, and D. Quartel. Comparing the performance of SNMP and web services based management. *IEEE electronic Transactions on Network and Service Management*, 1(2), 2004.

[6] T. Klie and F. Strauß. Integrating snmp agents with xml-based management systems. *IEEE Communications Magazine*, 42(7):76–83, July 2004.

[7] G. Pavlou, P. Flegkas, S. Gouveris, and A. Liotta. On management technologies and the potential of web services. *IEEE Communications Magazine*, 42(7):58–66, July 2004.

References (cont.)

[8] J. van Sloten, A. Pras, and M. J. van Sinderen. On the Standardisation of Web Service Management Operations. In *Proc. 10th Open European Summer School (EUNICE 2004) and IFIP WG 6.3 Workshop*, pages 143–150, Tampere, June 2004.

[9] T. Drevers, R. van de Meent, and A. Pras. Prototyping Web Services based Network Monitoring. In *Proc. 10th Open European Summer School (EUNICE 2004) and IFIP WG 6.3 Workshop*, pages 135–142, Tampere, June 2004.

[10] J.P. Martin-Flatin, D. Srivastava, and A. Westerinen. Iterative multi-tier management information modeling. *IEEE Communications Magazine*, 41(12), December 2003.

[11] J. Schönwälder, A. Pras, and J. P. Martin-Flatin. On the Future of Internet Management Technologies. *IEEE Communications Magazine*, 41(10):90–97, October 2003.

[12] R. State, E. Nataf, and O. Festor. A SMIng based Policy Access Control for SNMPv3. In *Proc. 6th IEEE International Conference on High Speed Networks and Multimedia Communications*, Estoril, July 2003.

[13] E. Nataf, O. Festor, and G. Doyen. An SMIng-Centric Proxy Agent for Integrated Monitoring and Provisioning. In *Proc. 8th IFIP/IEEE International Symposium on Integrated Network Management*, pages 491–503, Colorado Springs, March 2003.

[14] F. Strauß and T. Klie. Towards XML-oriented Internet Management. In *Proc. 8th IFIP/IEEE International Symposium on Integrated Network Management*, pages 505–518, Colorado Springs, March 2003.

References (cont.)

[15] Aiko Pras, Szabi Boros, and Bert Helthuis. Remote MIB item look-up service. In *Proc. 2000 IEEE/IFIP Network Operations and Management Symposium*, April 2002.

[16] C. Elliot, D. Harrington, J. Jason, J. Schönwälder, F. Strauß, and W. Weiss. SMIng Objectives. RFC 3216, Cisco Systems, Enterasys Networks, Intel Corp., TU Braunschweig, Ellacoya, December 2001.

[17] J. P. Martin-Flatin. Toward universal information models in enterprise management. In *Proc. VLDB 2001 Workshop on Databases in Telecommunications (DBTel 2001)*, volume 2209 of *Lecture Notes in Computer Science*, pages 167–178. Springer-Verlag, September 2001.

[18] B. Aboba, J. Arkko, and D. Harrington. Introduction to Accounting Management. RFC 2975, Microsoft Corporation, Ericsson, Cabletron Systems Inc., October 2000.

[19] R. Sprenkels and J. P. Martin-Flatin. Bulk Transfer of MIB Data. *Simple Times*, 7(1), March 1999.