Background of SMIng

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HISTORY OF SMIng

DEVELOPED BY IRTF-NMRG

- SNMP over TCP
- SNMP compression
- SNMP GetSubTree
- XML DTD for SNMP MIBs
- SMIng
WHY DID WE START SMIng?

- SMIv2 RELIED ON 1988 VERSION OF ASN.1
- TOOLS FOR SMIv2 RELATIVELY COMPLEX
- CERTAIN DATA TYPES WERE MISSING IN SMIv2
  64 bit integers, …
- LIMITED FACILITIES TO REUSE DEFINITIONS
- SMIv2 DID NOT ALLOW FOR EXTENSIONS
- NEW, POSSIBLY INCOMPATIBLE VARIANTS APPEARED

THE CHALLENGE:

CREATE A COMMON DATA DEFINITION LANGUAGE,
INDEPENDENT OF SPECIFIC PROTOCOLS
DATA VERSUS INFORMATION MODEL

INFORMATION MODEL

"formal" / UML, ...

Conceptual model / abstract model

DATA MODEL

LDAP SCHEMA

CORBA IDL

MIBs

PIBs

SMIv2

SPPI
DATA MODEL & “TRANSFER” PROTOCOL

DATA MODEL

- MIBs
  - SMIv2
- PIBs
  - SPPI

“TRANSFER” PROTOCOL

- SNMP - BER
- COPS - BER
- LDAPv3
- LDAPv3
- CORBA
  - IDL
  - SCHEMA
ROLE OF SMIng

MIBs / PIBs

- SNMP - BER
- COPS - BER

INFORMATION MODEL

DATA MODEL

- LDAP SCHEMA
- CORBA IDL

SMIng
SMIng PROTOCOL MAPPINGS

INFORMATION MODEL

MIBs / PIBs

SNMP MAPPING

SNMP - BER

SNMP - BER

COPS-PR MAPPING

COPS - BER