



FACULTEIT INGENIEURSWETENSCHAPPEN

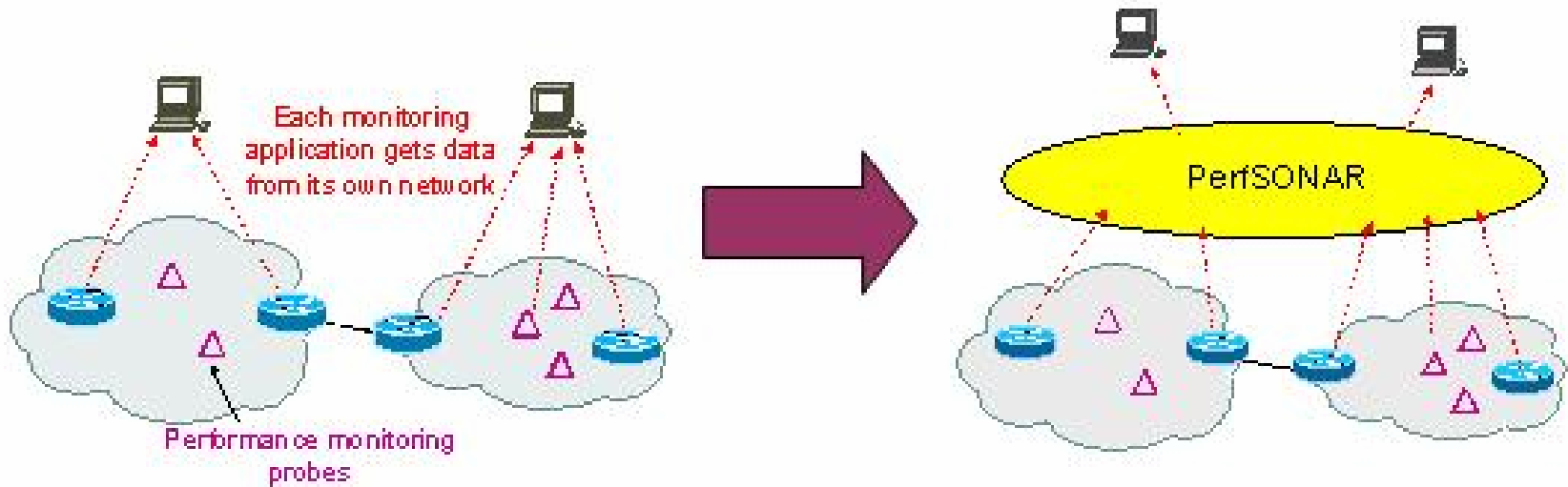
A PerfSONAR-compliant Looking Glass for the Geant2 Multi-Domain Monitoring Service

Steven Latré

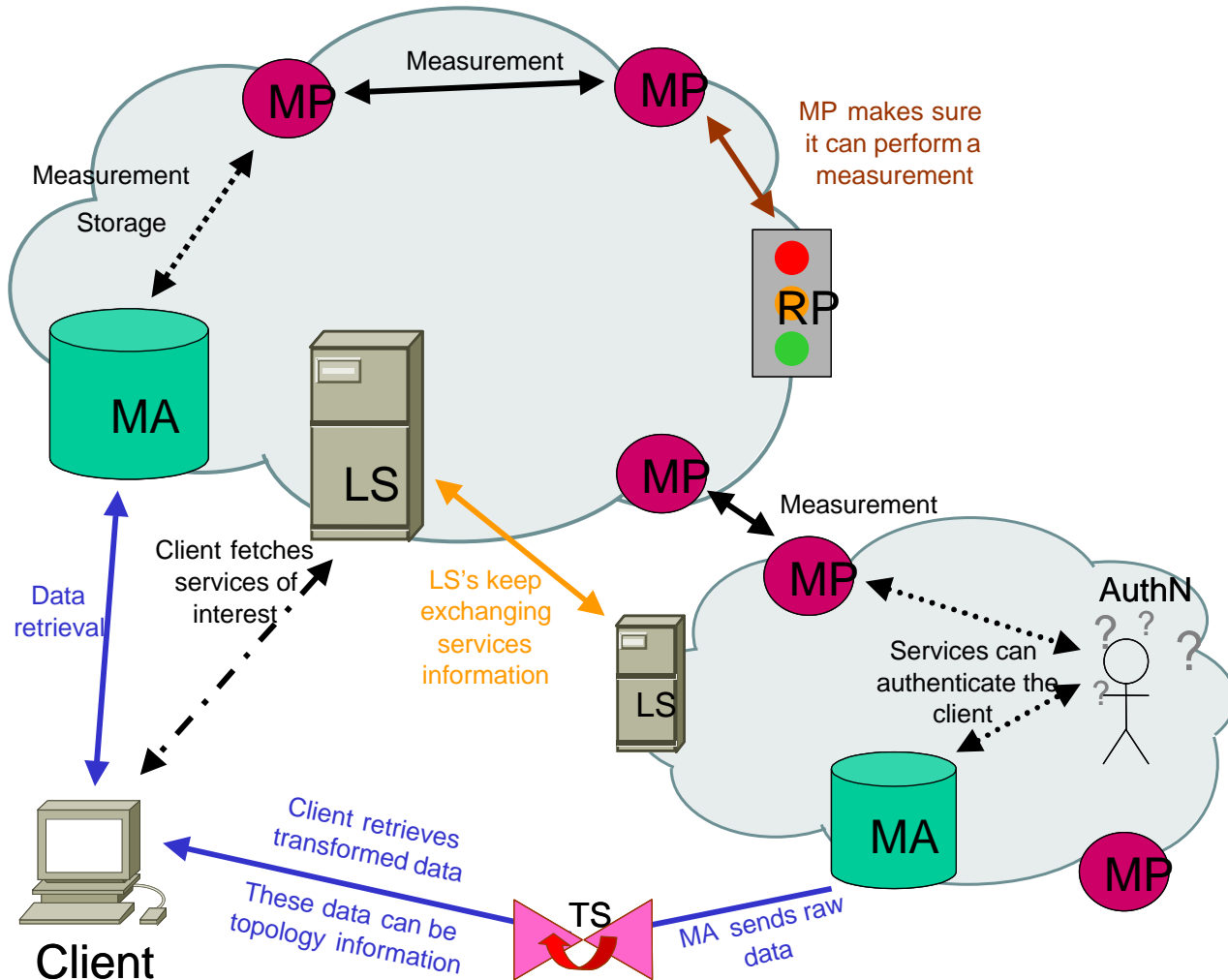
Stijn Verstichel (Stijn.Verstichel@intec.UGent.be)

S. Melis, F. Deturck, B. Dhoedt and Piet Demeester

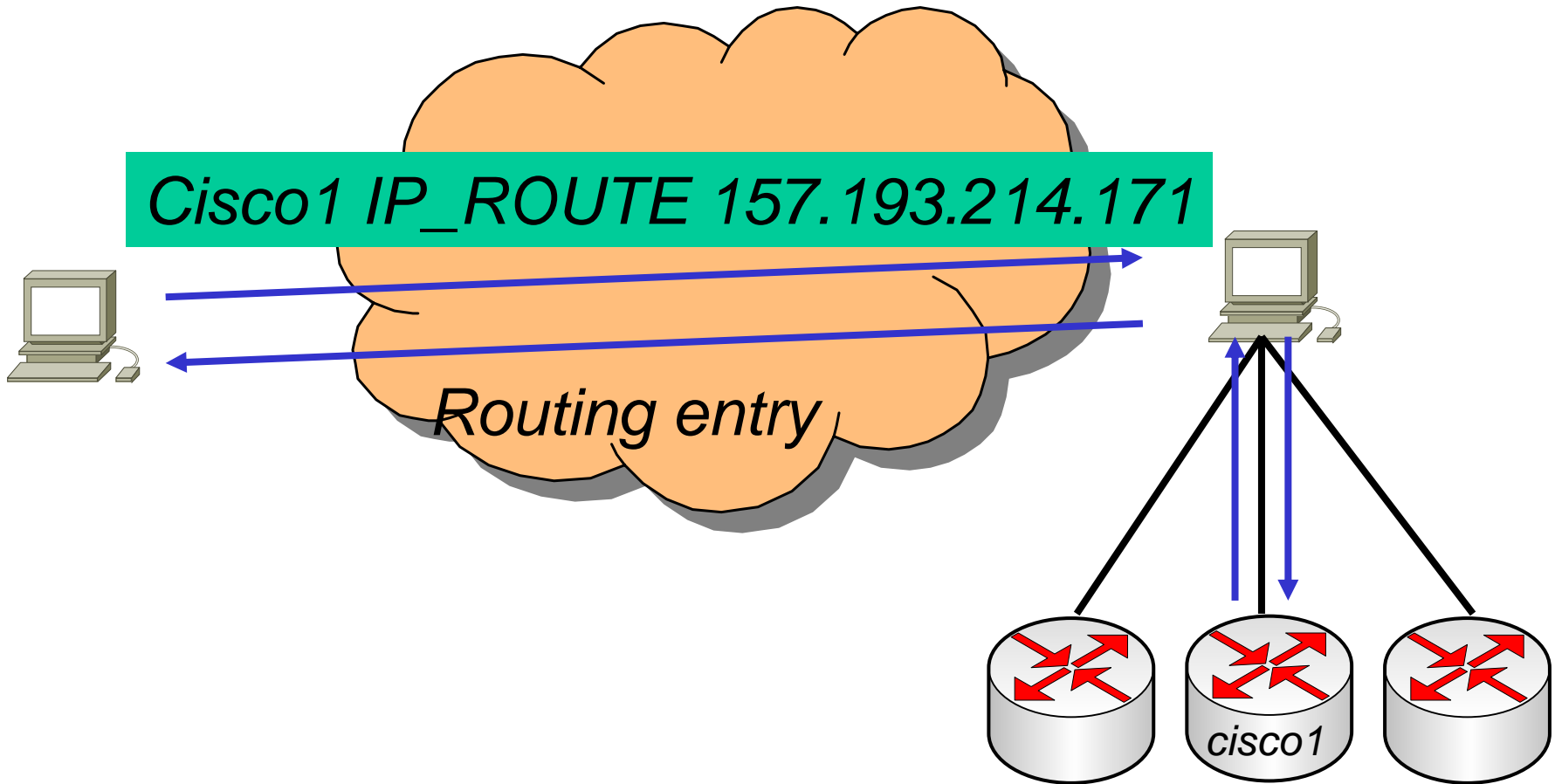
- **Introduction to the perfSONAR Framework**
- **SSH/Telnet MP**
 - Architecture
 - Functionality
- **Looking Glass**
- **Conclusions**
- **Future Work**



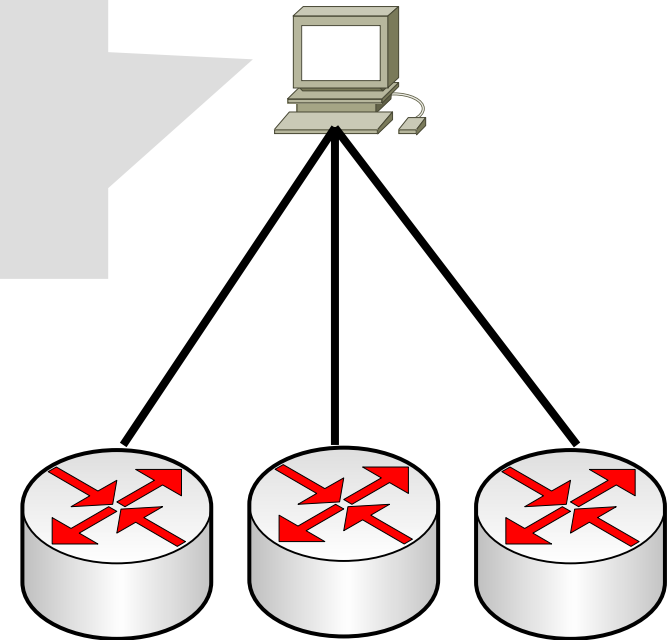
www.perfsonar.net

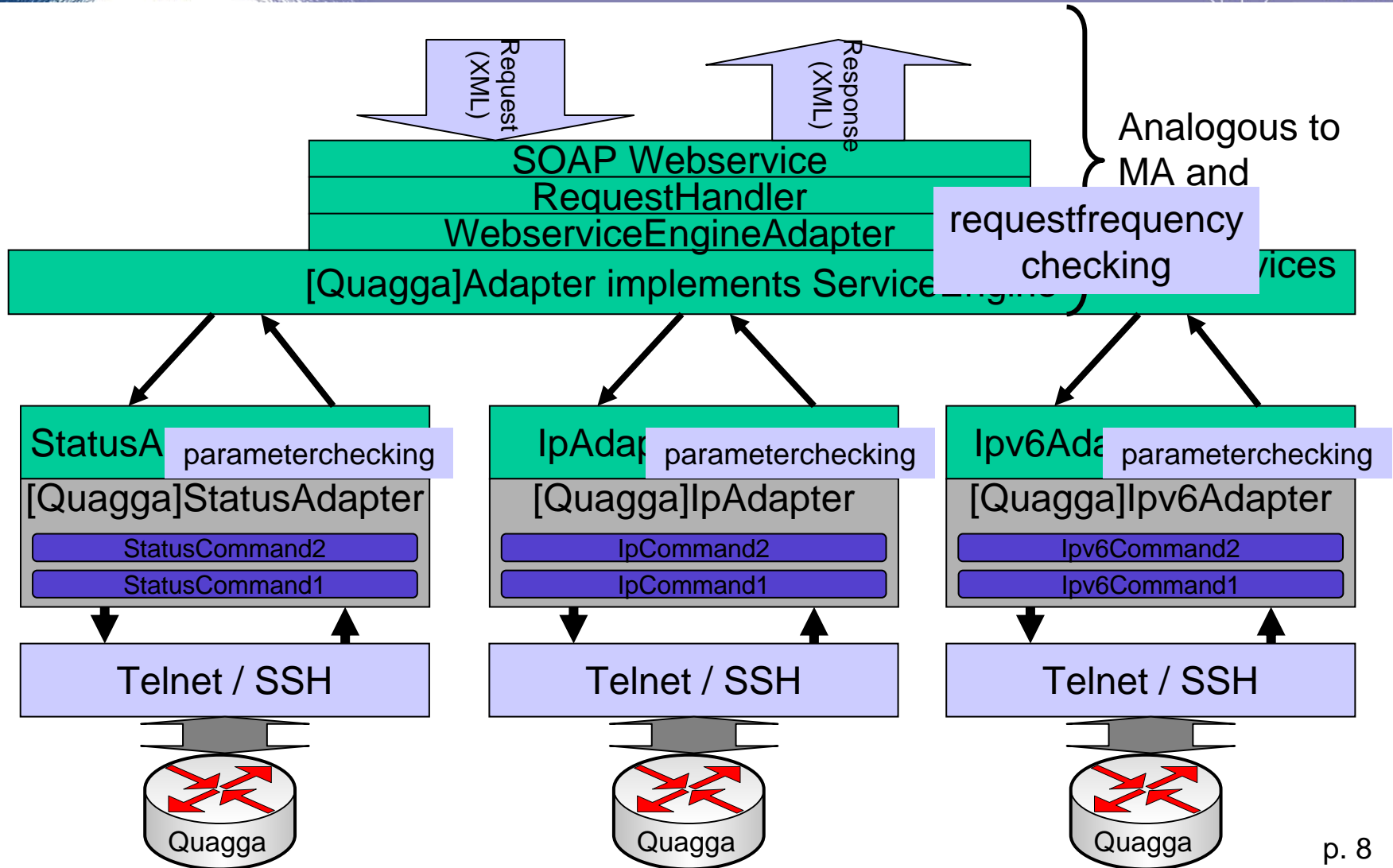


- **Introduction to the perfSONAR Framework**
- **SSH/Telnet MP**
 - Architecture
 - Functionality
- **Looking Glass**
- **Conclusions**
- **Future Work**



- *Preconfigured commands*
 - *Translation towards device-specific commands*
- *Parameter checking*
- *Resource protection*





■ **MetadataKeyRequest**

- Gives all available devices and commands
- Returns also extra non-functional information on these commands

■ **SetupDataRequest**

- Performs the actual measurement/invocation
- Executes thus the command on the underlying device

■ **Resource protection**

- Token Bucket Algorithm
- Malicious Parameter Protection
 - ◆ Regular Expressions in the configuration file
 - ◆ Java-class loaded at runtime

Caching of results

- Time configurable
- NO need to use
- CAN be used

- Could be useful for public use
- Less likely to be used for problem solving

■ Result Codes

- success.mp.ssh telnet
- failure.mp.ssh telnet. ...

■ Wizard style configuration

- Question/Answer based configuration
- Ant library used

Looking Glass Client

Control Configuration About

Looking Glass \ SNMP MIB

Request

Telnet / SSH Measurement Point: Working

Device: Additional devices to be contacted: Parameters:

Command:

Command Information

Description:

Syntax:

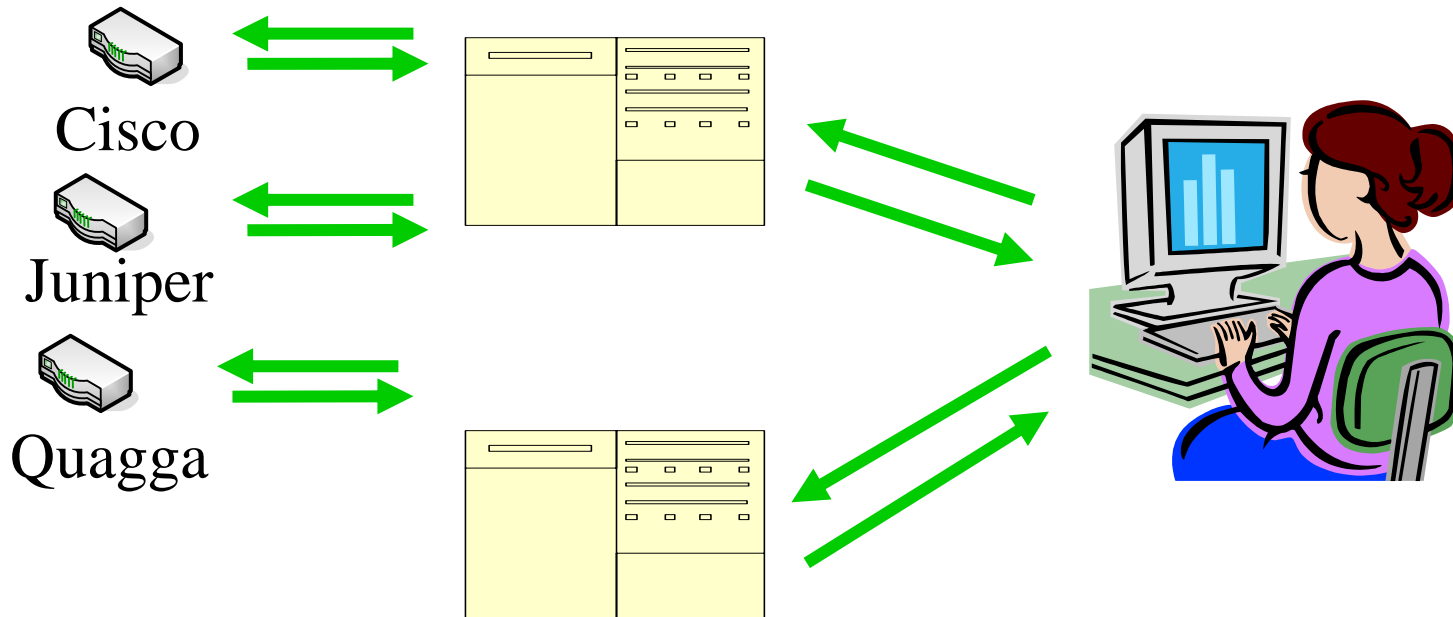
Device OS Command:

Response

Status Result String:

- **Introduction to the perfSONAR Framework**
- **SSH/Telnet MP**
 - Architecture
 - Functionality
- **Looking Glass**
- **Conclusions**
- **Future Work**

- SSH/Telnet MP
- SNMP MP
- Looking Glass Client



■ Intelligence

- Autonomous periodic checking of the results of commands
- Compare these results with reference answers
- Raise alarm in case of deviations

■ Authentication and Authorization

- AA services are implemented in the framework
- Integration of the functionality in the SSH/Telnet MP
- Single Sign-On
- Clearance Levels for different users

- **Looking Glass for Geant2, integrated in the Multi-Domain Monitoring Service**

- **Facilitates**
 - Cross-Border problem solving
 - Standardized Message Formats

- **Security Features**
 - Token-Bucket algorithm
 - Regular Expressions

- **Modular Architecture**
 - Easily extendible
 - Features to increase performance

Looking Glass Client [Control] [Configuration] [Tools] [About]

Looking Glass: **SNMP MIB**

Devices to be contacted:

SNMP Measurement Point:

Device: Port:

Working:

OID: Interface Index:

Result: **3374304**

MIB: Latest Results:

Thank you for your kind attention !

ifPhysAddress
 ifAdminStatus
 ifOperStatus
 ifLastChange
 ifInOctets
 ifInUcastPkts
 ifInNUcastPkts
 ifInDiscards
 ifInErrors
 ifInUnknownProtos
 ifOutOctets
 ifOutUcastPkts
 ifOutNUcastPkts
 ifOutDiscards
 ifOutErrors

Node Name:

OID:

Syntax:

Access:

Status:

DefVal:

Indexes:

Description:

Global View