DISTRIBUTED MANAGEMENT

THREE APPROACHES ARE BEING DEFINED

MIB BASED
- EXPRESSION MIB
- EVENT MIB
- NOTIFICATION LOG MIB

SCRIPT BASED
- SCRIPT MIB
- SCHEDULE MIB

REMOTE OPERATIONS BASED
- REMOTE OPERATIONS MIB
EXPRESSION AND EVENT MIB

TOP LEVEL
MANAGER

INTERMEDIATE LEVEL
MANAGER

AGENT
EXPRESSION AND EVENT MIB: CHARACTERISTICS

• STANDARD MIB APPROACH

• RESEMBLES THE OLD SNMPv2 M2M MIB

EXPRESSION MIB:
• INPUT ARE (WILDCARDED) VARIABLES OF A (LOCAL) MIB
• OPERATES ON ABSOLUTE AS WELL AS DELTA VALUES
  • RICH SET OF EXPRESSIONS
  • THE OUTPUT IS STORED IN THE VALUE TABLE
• THIS TABLE MAY SERVE AS INPUT FOR OTHER EXPRESSIONS

EVENT MIB:
• INPUT ARE VARIABLES OF A (REMOTE) MIB
• TRIGGERS ON CHANGES, OR TRESHOLD CROSSING
• GENERATES A NOTIFICATION OR SET OPERATION
SCRIPT MIB

TOP LEVEL MANAGER

INTERMEDIATE LEVEL MANAGER

RUNTIME ENVIRONMENT

HTTP

SNMP

SCRIPT MIB

SCRIPT REPOSITORY

AGENTS A A A A A A
SCRIPT MIB: CHARACTERISTICS

- FUNCTIONALITY CAN BE DEFINED AT RUN-TIME

- POWERFUL AUTONOMOUS ACTIONS

- MAY BE EASIER TO OPERATE FOR THE TOP-LEVEL MANAGER

- PROTECTION MECHANISMS NECESSARY

- DIFFERENT SCRIPT LANGUAGES
SCRIPT MIB: STRUCTURE

CONSISTS OF 6 TABLES

- LANGUAGE TABLE
- EXTENSIONS TABLE
- SCRIPT TABLE
- CODE TABLE
- LAUNCH TABLE
- RUN TABLE
SCRIPT MIB: LANGUAGE TABLE

DEFINES THE LANGUAGES THIS SYSTEM SUPPORTS

- AN OID TO INDICATE THE LANGUAGE
- THE VERSION
- AN OID TO INDICATE THE VENDOR
- THE REVISION
- A DESCRIPTION

TABLE IS READ ONLY
SCRIPT MIB: EXTENSIONS TABLE

DEFINES THE EXTENSIONS FOR EACH LANGUAGE

- AN OID TO INDICATE THE EXTENSION
- THE VERSION
- AN OID TO INDICATE THE VENDOR
- THE REVISION
- A DESCRIPTION

TABLE IS READ ONLY
SCRIPT MIB: SCRIPT TABLE

LISTS ALL SCRIPTS KNOWN TO THE SYSTEM

ALLOWS TO:

- DOWNLOAD SCRIPTS FROM A URL (PULL MODEL)
- READ SCRIPTS FROM LOCAL NON-VOLATILE STORAGE
- STORE SCRIPTS IN LOCAL NON-VOLATILE STORAGE
- DELETE SCRIPTS FROM LOCAL NON-VOLATILE STORAGE
- LIST PERMANENT SCRIPTS (THAT CAN NOT BE CHANGED OR REMOVED)
- READ AND MODIFY THE SCRIPT STATUS (ENABLED, DISABLED, EDITING)
SCRIPT MIB: CODE TABLE

LISTS THE CODE OF A SCRIPT

ALLOWS TO:

• DOWNLOAD SCRIPTS VIA SNMP (PUSH MODEL)
• MODIFY SCRIPTS VIA SNMP (EDITING)

IMPLEMENTATION IS OPTIONAL
SCRIPT MIB: LAUNCH TABLE

ALLOWS TO:

• ASSOCIATE A SCRIPT WITH A ‘PERSON’ WHO INVOKES EXECUTION
• PROVIDE ARGUMENTS AND PARAMETERS FOR SCRIPT INVOCATION
  • INVOKE SCRIPTS WITH A SINGLE SET OPERATION
• CONTROL THE NUMBER OF ACTIVE INVOCATIONS
• CONTROL THE TOTAL NUMBER OF INVOCATIONS
ALLOWS TO:

- RETRIEVE STATUS INFORMATION FROM RUNNING SCRIPTS
- CONTROL RUNNING SCRIPTS (SUSPEND, RESUME, ABORT)
- RETRIEVE RESULTS FROM RECENTLY TERMINATED SCRIPTS
- CONTROL THE REMAINING MAXIMUM LIFETIME OF A RUNNING SCRIPT
- CONTROL HOW LONG SCRIPT RESULTS ARE ACCESSIBLE
SCHEDULE MIB

PERFORMS SET OPERATIONS

FOR EXAMPLE ON THE SCRIPT MIB
• TARGET MUST BE Integer32

ON A PERIODIC OR CALENDER DRIVEN BASE
REMOTE OPERATIONS MIB

PING MIB
• TO PERFORM PING FROM A REMOTE HOST

TRACEROUTE MIB
• TO PERFORM TRACEROUTE FROM A REMOTE HOST

NAME LOOKUP MIB
• TO PERFORM NAME LOOKUP FROM A REMOTE HOST