Providing the `Model` object

Aurélien CEDEYN

February 28, 2008

The `Model` object

A Network topology is composed by numerous elements (routers, switches, fiber, etc.) and by relations which connect them.

We want to provide the network user (administrator, end user, etc.) a modelisation of the network, through an application view.

The NML goal is to instance modelisations of the real topology. This real topology is too complex regarding the description needs of applications, some informations are not needed.

The real topology of this network is its description. The real topology is represented by a singelton object called RealTopo. The instance of this object does not neceserly exist.

Only some information of RealTopo are revelant for a particular usage. That's why the concept of topology modelisation is needed. We represent the modelisation by the object `Model` . An instance of `Model` allows to describe the real topology considering the application needs.

Examples

Here is 2 examples of the `Model` goal:

- If we consider an instanciation of the object `Model` for each layer of the OSI Model, then a switch/router is included at the same time in the `Model` "Layer 2" as a switch, and in the `Model` "Layer 3" being a router.

- If we consider another instanciation of the object `Model` to represent the same network for two different types of user: administrators and end users. Then we will discribe all nodes and switches corresponding to the computation network for end users in the `Model` "User view". On the other side all nodes, switches and internal monitoring services corresponding to the administration network will be described in the `Model` "Admin View".

Figure 1: Graphical example of multiple `Model`