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An object oriented model for IPv4/IPv5 network management

COS 236 essay submitted by
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3 Solution to IPv4/IPv6 Trasition

3.1 Proposed Management Model

There is a proposed database management model to cope with the coexistence of IPv4 and IPv6. This entails a distributed object-oriented database and hierarchical network management architecture. It mainly comprises of three particular components, namely, the Monitor, Collector and Distributed Object- Oriented Database. These basically provide an insfrastructure for different IPv4/IPv6 configurations and abstracts the dependence on the underlying architecture. Also incorporated into the this management model is the REST architecture and the Perspective Broker protocol. [1]

3.1.1 Monitor

Basically, the Monitor simultaneously listens on IPv4 and IPv6 connections. Therefore facilitating effective management of purely IPv4, IPv6 and dual stacks without any extensive overhead. This is achieved through a number of components that, together, compose the Monitor. These are the modeling module, performance collecting module, SNMP/SSH channel module, events module and user interface. The user interface. The monitor can be found below the Distributed Object-Oriented Database and above the Collector on the proposed hierarchy of componenets that form the management model. It is therefore effectively a link between the two.

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7   Conclusion

The proposed management model is well-thought and effectively abstracts any potential complexities by using a Distributed Object-Oriented Database approach as opposed to a Centralized approach. This has proven to give the prototype flexible, reliable and scalable in the complex IPv4/IPv6 network environments. This seperation of concerns successfully solves the problem of the co-existence of the IPv4 and IPv6 protocols and minimizes the complexity of this consensus.

References

[1] Zhao Qin and Ma Yan. An object-oriented model for ipv4/ipv6 network management. *The Journal of China Universities of Posts and Telecommunications*, 17:89–92, 2010.