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Open
Source
Concepts

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NETWORK SIMULATOR

NETWORK SIMULATION

- ✖ In computer network, **network simulation** is a method whereby a software program models the activities of a network by calculating the communication between the different network objects.
- ✖ Objects such as routers, nodes, switches, access points, links etc.

NETWORK SIMULATOR

- ✖ A **network simulator** is a **software program that replicates the functioning of a computer network**.
- ✖ In **simulators**, the **computer network is typically demonstrated with devices, traffic etc. and the performance are evaluated**.
- ✖ Normally, users can then adapt the simulator to accomplish their precise analysis needs.
- ✖ The **network parameters define the state of the network (node placement, existing links) and the events (data transmissions, link failures, etc.)**.

TRACE FILES

- ✖ A significant output of simulation is the trace files.
- ✖ Trace files can document every incident that happened in the simulation and are used for examination

NS2 - NETWORK SIMULATOR VERSION 2

- ✖ NS2 is the abbreviation of
- ✖ It was considered explicitly for exploration in network communication and event driven open-source simulator in computer.
- ✖ OTCL and C++ used to create and run NS2.
- ✖ NS2 works on Windows and Linux platforms, that supports wired or wireless network and also use the command line interface as a user interface, API a pure event base software tool with super simulation design, it has more models which help the user to get desired output easily.

Open Network Management System

OPEN NMS

- ✖ It is a free and open-source initiative grade network monitoring and management platform.
- ✖ It is established and maintained by a community of users developers and by the Open NMS Group, it offering services, training and support.

THE GOAL IS FOR OPEN NMS

- ✖ The goal is to be an **actually distributed, scalable management application platform** for all features of the **FCAPS (Fault, configuration, accounting, performance, security) network management model**.

GNU (GENERAL PUBLIC LICENSE.)

- ✖ **OpenNMS comprises a discovery engine to routinely configure and manage network devices without operator intervention.**
- ✖ **It is written in Java and is issued under the GNU (General Public License.)**

TYPES OF OPENNMS

- ✖ **OpenNMS is the Worlds first software for Network monitor and management with opensource options.**
- ✖ **There are two types in this Meridian and Horizon.**
- ✖ **When we need stability and long term support choose Meridian which is best for Enterprises as well as businesses.**
- ✖ **Horizon used where innovation occurs frequently. It is Best for IT-ecosystem, new technologies monitoring.**

HISTORY OF OPENNMS

- ✖ **OpenNMS was Released in 1999 by Steve Giles, Brian Weaver, and Luke Rindfuss.**
- ✖ **In 2004 OpenNMS Group was created by Balog, Matt Brozowski, and David Hustace. It is written in Java and can run on all type of platform.**
- ✖ **It gives us Event management & Notification,**
- ✖ **Discovery & Provisioning, service monitoring and Data Collection.**
- ✖ **Won lot of awards for best of opensource software.**

OPENNMS HAS THREE MAIN FUNCTIONAL AREAS:

- ✖ **Service monitoring**, where a number of monitor modules can govern if network-based services (ICMP, HTTP, DNS, etc.) are accessible.
- ✖ **Data Gathering** by using SNMP and JMX.
- ✖ **Event management and notifications**, which comprises of alarm reduction and a robust announcement system with accelerations and duty schedules.

SCALABILITY OF OPENNMS

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- ✖ **OpenNMS is recognized for its scalability.**
- ✖ **Though it can be easily used to handle a small SMB Network, it is also accessible enough to be used in place of large enterprise management products such as HP Open View, IBM Micro muse or IBM Tivoli.**

USES OF OPEN SOURCE HARDWARE

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- In this period of increased competition and cyber crimes, the computers used by individuals or business organizations may have spy hardwares of rivals.
- Open source hardware technology helps in such threats.
- In this technique we get the components of the hardware and its circuit diagram, so that we can remove suspicious spyware if found.

POINTS TO REMEMBER

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- ✖ Open Source denotes to some program whose source code is made available for usage or reform as users or other developers see appropriate
- ✖ In simulators, the computer network is typically demonstrated with devices, traffic etc. and the performance are evaluated.
- ✖ A significant output of simulation is the trace files. Trace files can document every incident that happened in the simulation and are used for examination.
- ✖ NS2 has C++ and Object-oriented Tool Command Language (OTcl) of languages 2.
- ✖ It link together for C++ and the OTcl using TclCL.
- ✖ Open NMS (Network Management System) is a free and open source initiative.



Thank You!!