

Abstract

In this study applications for "Monitoring in Libraries" used in ITU Mustafa Inan Library are presented. Nagios open source monitoring application is used in this project. The subject of "Monitoring in Libraries" covers controlling the network objects (devices, servers and services) located inside and outside the library. Installation, configuration, stages and reporting of monitoring are described in detail below this work.

Library Profile

Istanbul Technical University Mustafa Inan Library is one of the largest University Library in its region. The Library has a total collection about 500,000 printed volumes including books, textbooks, standards and theses & dissertations. Addition to these there are more than 170,000 ebooks and 45,000 ejournals subscriptions. Library has over 25,000 patrons both faculty members and students. The Library is open 7/24 hours with all sections with the 99 staff in all 6 branch and this is the first and only library work at this level in Turkey. There are 61 OPAC computers for patron usage.

Objectives and Challenges

Library needed an integrated, centralized and scalable management tool to manage the whole IT infrastructure for a single point of view. The solution is needed to be easy to set up and configure and easy to maintain. There wasn't any similar work used in libraries to control whole network objects. System must check library's network accessible objects like library servers, routers, opacs but the main difficulty is to check online resources located anywhere in the world.

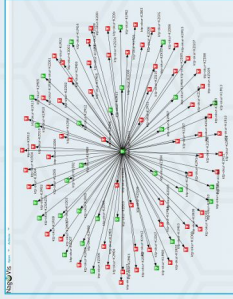
- Checking accessibility of every online resources that library has and inform library user in any interruption of service
- Controlling and monitoring of OPAC usage
- Controlling of library servers

Solution and Results

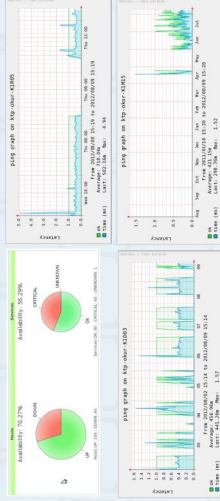
To solve library's monitoring challenges Nagios was selected and introduced as a monitoring solution because of its flexibility to incorporate and aggregate a wide range of monitoring services (2). If department decided to use Nagios coming with FAN Distribution (Fully Automated Nagios) (3). The purpose of using FAN is to provide a quick and easy installation which includes the most-used tools in the Nagios community. It is very easy to install. A large number of tools are also being distributed, which makes the implementation of an efficient monitoring platform much easier. FAN coming with Centreon is very useful tool to configure Nagios.

Monitoring

Whole monitored networks objects are shown on graphics both on Nagios screen or add-ons applications like Nagvis. These examples taken from Nagvis:



OPACs Map: Opacs computers instant snapshot.



Global health of hosts and services. Daily, weekly and yearly graphic of a sample OPAC computer.

Notification

Nagios runs each tests and returns a particular state like OK, WARNING, CRITICAL AND UNKNOWN. The alert notification is fully configurable through plug-ins (sent by e-mail, text message, sms, etc...). Here is a sample alert received after one of service interrupt:



Conclusion

Seamless and easy installation has been made using FAN Distribution. All applications located in this distribution are worked smoothly and successfully. System shows the necessary warnings and sending email alerts according to the configuration. In summary the following matters are being constructed and studies began to be made in accordance with deficiencies.

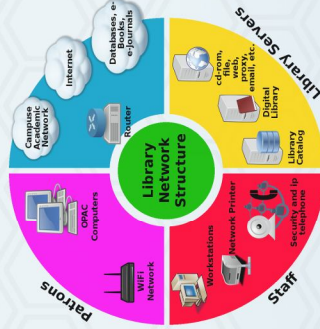
- The Nagios Configuration has been done with extremely simplified operations using Centreon comes with FAN distribution
- Windows 7 Operating system was using in OPACs. For this reason initially it did not respond ping request. All OPAC settings has been changed to respond ping request and monitoring is working properly.
- Monitoring the local devices and servers are successful
- After starting to serve 7/24 hours service, determining the status of opac, if anybody log in or not, has gained more importance rather than on or off condition.
- Some databases are making platforms changes. Monitoring configurations must change according to new database address.

References and Acknowledgements

- (1) In Wikipedia. The Free Encyclopedia. Retrieved 16:34, August 08, 2012, from <http://en.wikipedia.org/wiki/Nagios>
- (2) Nagios 3 Enterprise Network Monitoring : including Plugins and Hardware Devices (Max Schubert (and others), 2008
- (3) In Fully Automated Nagios. Retrieved 16:34, August 08, 2012, from http://www.fullyautomatednagios.org/IFAN/IFAN_Documentation_EN_V2_1.pdf

Monitoring in Libraries

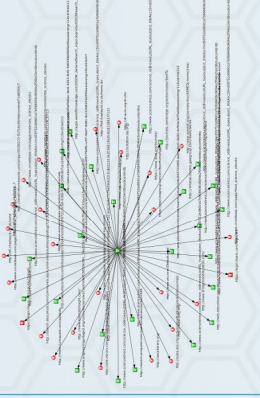
The term network monitoring describes the use of a system that constantly monitors a computer network for slow or failing components and that notifies the network administrator (via email, SMS or other alarms) in case of outages(1). Monitoring in libraries have the similar meaning in library environment. But there are mainly three layers to monitor for libraries:



local devices and services (opacs, computers, servers, routers, etc.) and remote servers (databases, ebooks and ejournals). Controlling of collection was an important issue in old library environment but after the advances in network technologies new kind of objects like databases, ebooks and journals started to locate in collections. Another objective of monitoring for libraries is to check the availability of these materials for the library patrons. Monitoring is a new subject in the new era of the "library without walls".

Solution and Results

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Database Map: Database servers instant snapshot.

Reporting

As shown in figures different text and graphical reports are created for every monitored object.

