Nagios - Example Paper for I524

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This paper is an example research article for I524, written under the example template. We selected Techlist 363, Nagios, as the topic to demonstrate how to properly compose a research article. Nagios is a platform/tool, which provides a set of software for system and network infrastructure monitoring. Within this article, we explored what problem it tried to solve, how it solved the problem, and why it's important to have Nagios. We also discussed the advantages and disadvantages it possessed. © 2017 https://creativecommons.org/licenses/. The authors verify that the text is not plagiarized.

Keywords: Cloud, I524

https://github.com/vibhatha/sp17-i524/blob/master/paper1/S17-TS-0003/report.pdf

1. INTRODUCTION

According to [1], even through the machines have become more and more critical to us human being, they are untrustworthy. I just couldn't agree more with the author. Look at the Git-Lab.com incident happened on Jan 31st 2017. A tired system administrator, working late at night in the Netherlands, had accidentally deleted a directory on the wrong server during a frustrating database replication process: he wiped a folder containing 300GB of live production data that was due to be replicated [2]. Mistakes could be corrected easily since Gitlab have deployed several methods to backup and replicate the production data and all they just need to do is to recover and restore from the backup. However, after several attempts, they found that out of 5 backup/replication techniques deployed none were working reliably or set up in the first place.

2. WHAT IS NAGIOS

Nagios is a system and network monitoring tool under open source license that provides instant awareness of mission-critical IT infrastructure. Nagios allows to monitor the infrastructure, alert the system admin, provide visualized reports, schedule downtime for maintenance, and plan upgrade in advance with trends and capacity diagrams. Its design emphasizes highly on flexibility and scalability. To provide such flexibility, Nagios is composed of different modules. The reason behind this modular design is that Nagios fully considers the variety of systems and networks it will monitor on. Different customers require a large amount of customization before they themselves know they do.

3. WHY IS NAGIOS IMPORTANT

This section discusses why is Nagios important and why we need it. Elaborate Nagios' features with Gitlab example in the introduction. Modular. Scalable. Adaptable.

The sections below show examples of different article components.

4. ADVANTAGES AND DISADVANTAGES

We will dig more on Nagios by take a look at its architecture.

4.1. Sample Figure
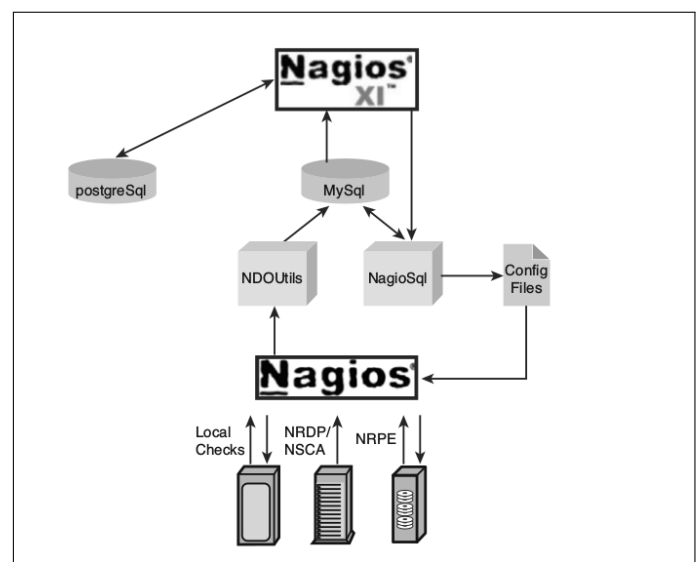
Figure 1 shows an example figure.

Fig. 1. Nagios Architecture

5. CONCLUSION

With the Gitlab incidence, we can see how untrustworthy the machines can be. This is also why we need Nagios.

REFERENCES

[1] D. Josephsen, *Nagios: Building Enterprise-Grade Monitoring Infrastructures for Systems and Networks*, 2nd ed. Upper Saddle River, NJ, USA: Prentice Hall Press, 2013.

[2] S. Sharwood, "Gitlab.com melts down after wrong directory deleted, backups fail," Web Page, Feb. 2017. [Online]. Available: https://www.theregister.co.uk/2017/02/01/gitlab_data_loss/

A. WORK BREAKDOWN

The work on this project was distributed as follows between the authors:

John Smith. Explored the deep mathematical knowledge needed for this paper and taught it to the other authors.

Alice Smith. She explored the world of Oz and was instrumental to work on the deployment of hadoop.

Bruce Wayne. He did not contribute at all to this paper and flew around to safe the world.

B. REPORT CHECKLIST

- ☐ Have you written the report in word or LaTeX in the specified format?

- ☐ Have you included the report in github/lab?

- ☐ Have you specified the names and e-mails of all team members in your report. E.g. the username in Canvas?

- ☐ Have you included the HID of all team members?

- ☐ Does the report have the project number added to it?

- ☐ Have you included all images in native and PDF format in gitlab in the images folder?

- ☐ Have you added the bibliography file in bibtex format?

- ☐ Have you submitted an additional page that describes who did what in the project or report?

- ☐ Have you spellchecked the paper?

- ☐ Have you made sure you do not plagiarize?

- ☐ Have you made sure that the important directories are all lower case and have no underscore or space in it?

- ☐ Have you made sure that all authors have a README.rst in their HID github/lab repository?

- ☐ Have you made sure that there is a README.rst in the project directory and that it is properly filled out?

- ☐ Have you put a work breakdown in the document if you worked in a group?

C. POSSIBLE TECHNOLOGY PAPER OUTLINE

The next sections are just some suggestions, your may want to add sections and subsections as you see fit. Images and references do not count towards the 2 page length. Please use the \section, \subsection, and \subsubsection commands in your paper. do not introduce hardcoded numbers. Use the \ref and \label commands to refer to the sections.

Abstract   Put in the abstract a summary what this paper is about

1. Introduction   Introduce the technology and provide general useful information.

2. Architecture   If applicable include a description about architectural details. This may include a figure. Make sure that if you copy a figure you put the [?] in the caption also. Otherwise it is plagiarism.

2.1. API   comment on the API which could include language bindings

2.2. Shell Access   If applicable comment on how the tool can be used from the command line

2.3.Graphical Interface   If applicable comment on if the technology has a GUI

3. Licensing   Often tools may have different versions, some fre, some for pay. Comment on this. For example while a tool may offer a comercial version this version may be too costly for others. Identify especially the difference between features for free vs commercial tools.

Sometimes you may need to introduce this also in the introduction as there may be a big difference and without the knowledge you do not provide the user an adequate introduction.

4. Ecosystem   Some technologies have a large ecosystem developed around them with extensions plugins and other useful tools. Identify if they exists and comment on what they can achieve

provide potentially a mindmap or a figure illustrating how the technology fits in with other technologies if applicable.

4. Use Cases

4.1. Use Cases for Big Data   Locate and describe major usecases that demonstrate the technology while focussing on big data related use cases. Make sure you do proper references with the [?] command. Do not put URLs in the text.

4.2. Other Use Cases   Some technologies may not just be used for big data, find other makor use cases from other areas if applicable. Make sure you do proper references with the [?] command. Do not put URLs in the text.

5. Educational material   Put information here how someone would find out more about the technology. Use important material and do not list hundrets of web pages, be selective.

6. Conclusion   Put in some conclusion based on what you have researched

Acknowledgement   Put in the information for this class and who may sponsor you. Examples will be given later