

DevOps Certification Training

Lesson 07: Continuous Monitoring



Learning Objectives

By the end of this lesson, you will be able to:

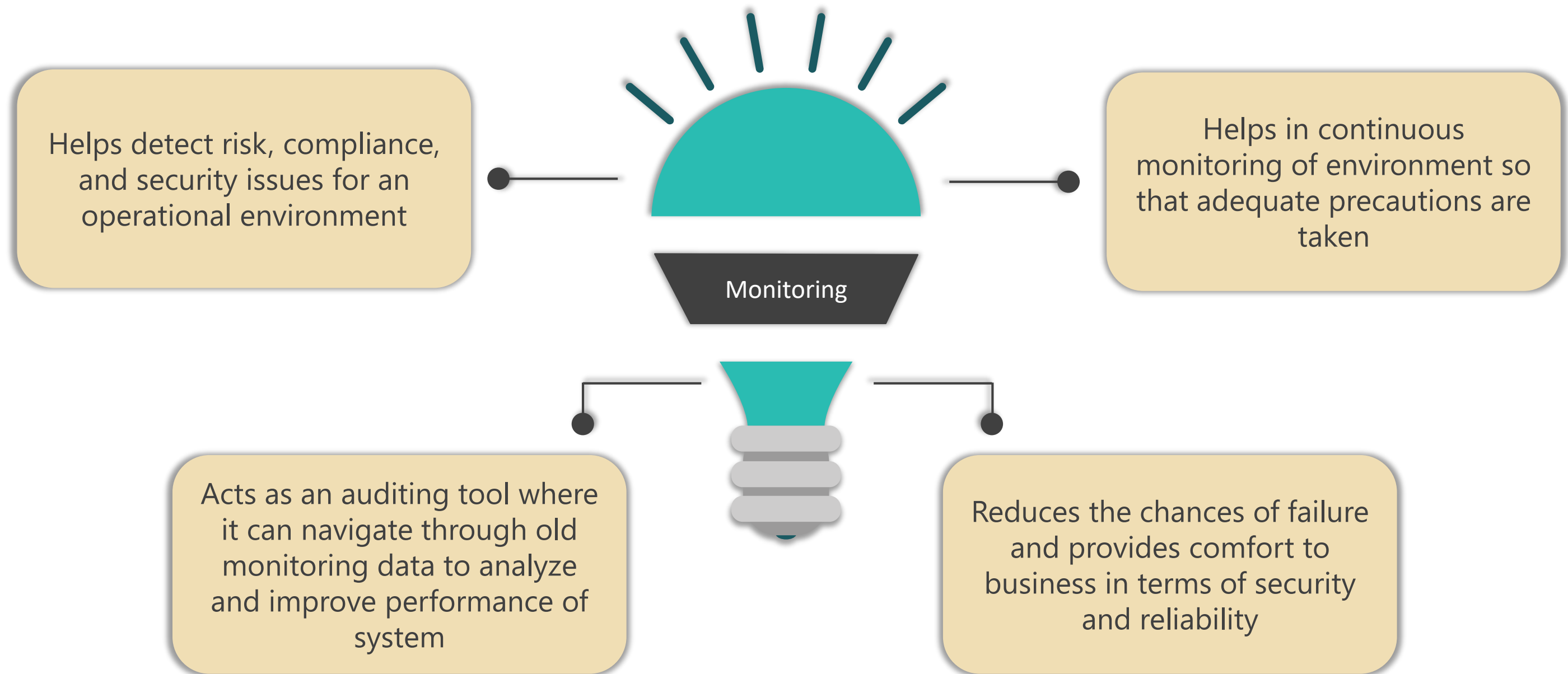
- ✓ Explain the role of continuous monitoring tools in DevOps
- ✓ Demonstrate Nagios
- ✓ Describe Grafana
- ✓ Describe ELK Stack
- ✓ Identify the suitable continuous monitoring tool for your organization



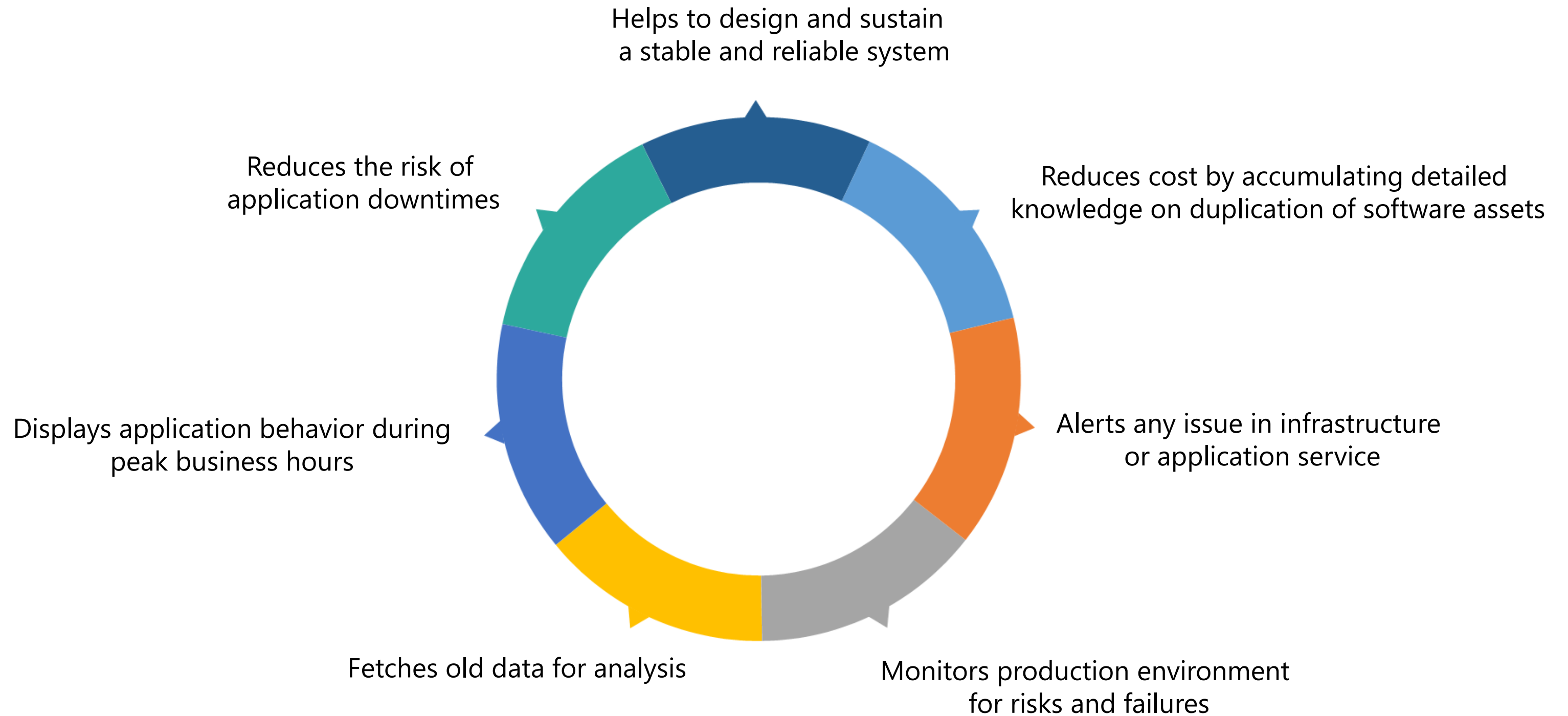
Overview of Continuous Monitoring

Overview of Continuous Monitoring

Continuous Monitoring



Role of Monitoring Systems



Types of Monitoring System

Types of Monitoring

Real-Time Monitoring

- Server CPU stats
- Disk usage and memory stats
- Spikes in CPU performance
- I/O count on server

Infrastructure Monitoring

- CPU and memory
- Network and routers
- App servers, web servers, and DB servers

Application Monitoring

- API success/failures count
- API accessibility
- API HTTP error code

Popular Monitoring Tools



DevOps Monitoring Tools



Nagios Core is a free open-source, application and infrastructure monitoring tool. Nagios was launched in 2002 and it became one of the popular monitoring tools in many organizations. It can monitor applications, networks, routers, switches, and servers. It needs Nagios NRPE agents to be deployed on respective servers to collect stats from node machines. Nagios enterprise version is also available.



ELK is a log monitoring and open-source tool. ELK is a combination of three open-source tools: Elasticsearch, Logstash, and Kibana. Elasticsearch is the heart of the stack since it acts as data engine, stores all applications, server logs, and fetches the data to analyze. Logstash acts as data pipeline which processes logs and helps in saving the data to Elasticsearch. Kibana is a front-end application used to visualize and display the data fetched from data engine.

DevOps Monitoring Tools (Contd.)

ZABBIX

Zabbix was launched in 2001 and is open-source tool that provides similar features like Nagios. It needs agents to be installed on the nodes in order to monitor the data.



Sensu is a powerful next-generation monitoring tool which is more popular compared to traditional monitoring tools. It was launched in 2011 as open-source under MIT license. Sensu enterprise version is available with additional features and plugins. It uses RabbitMQ to exchange data between nodes and master server. It uses Redis as datastore to store all the monitoring data.

DevOps Monitoring Tools (Contd.)



New Relic was launched in 2008 as SAAS(Software A As Service) software offering. It helps to monitor applications, and servers in real-time. New Relic's collectors installation in the nodes is necessary instead of New Relic software in the infrastructure. All monitoring data is transferred to New Relic and its dashboards are used to visualize monitoring data.



Splunk is interpreted as an application and security analytics tool. It collects data from each application and server and can be further analyzed to predict the future behavior for necessary precautions. Monitoring application failures and warning exceptions are possible. It is implemented in financial and product-based organizations to monitor the applications.

DevOps Monitoring Tools (Contd.)



Datadog is a cloud-based monitoring service. Datadog agent should be installed on the servers to monitor other servers within the infrastructure. All monitoring data is pushed to Datadog web application to visualize it.



AppDynamics tool is used to monitor the server and application performance which results in improved efficiency of the source code. It helps in making a suitable business decision while monitoring application, as it monitors both mobile and web.

DevOps Monitoring Tools (Contd.)



AWS CloudWatch is one of the core services of AWS cloud. By default, all the services in AWS are monitored by CloudWatch. It can store logs from various serverless components in AWS. It retains and stores monitored data, which is helpful to validate the stats anytime. It helps to create and generate alerts to users in case of issues.

Demonstrate Nagios



Nagios Installation

```
root@ip-172-31-15-211:~# curl https://assets.nagios.com/downloads/nagiosxi/install.sh | sh
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left   Speed
100  629  100  629    0     0   436      0  0:00:01  0:00:01 --:--:--  435
/usr/bin/wget
Reading package lists... Done
Building dependency tree
Reading state information... Done
wget is already the newest version (1.19.4-1ubuntu2.1).
0 upgraded, 0 newly installed, 0 to remove and 105 not upgraded.
check if /tmp/nagiosxi exists
Downloading latest Nagios XI release
--2018-11-22 02:41:48-- https://assets.nagios.com/downloads/nagiosxi/xi-latest.tar.gz
Resolving assets.nagios.com (assets.nagios.com)... 72.14.181.71, 2600:3c00::f03c:91ff:fedf:b821
Connecting to assets.nagios.com (assets.nagios.com)|72.14.181.71|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 54397198 (52M) [application/x-gzip]
Saving to: â/tmp/xi-latest.tar.gzâ

/tmp/xi-latest.tar.gz          100%[=====]

2018-11-22 02:42:07 (2.81 MB/s) - â/tmp/xi-latest.tar.gzâ saved [54397198/54397198]

Checking MySQL credentials...
MySQL not yet installed - that's okay.
Running './0-repos'...
Configuring Repos...
Repos configured OK
RESULT=0
Running './1-prereqs'...
Installing prerequisites...
Checking conflicting packages
```


Nagios Installation (Contd.)

```
root@ip-172-31-15-211:~# service postgresql status
â postgresql.service - PostgreSQL RDBMS
   Loaded: loaded (/lib/systemd/system/postgresql.service; enabled; vendor preset: enabled)
   Active: active (exited) since Thu 2018-11-22 02:46:47 UTC; 37min ago
 Main PID: 7625 (code=exited, status=0/SUCCESS)
    Tasks: 0 (limit: 1152)
   CGroup: /system.slice/postgresql.service

Nov 22 02:46:47 ip-172-31-15-211 systemd[1]: Starting PostgreSQL RDBMS...
Nov 22 02:46:47 ip-172-31-15-211 systemd[1]: Started PostgreSQL RDBMS.
root@ip-172-31-15-211:~# service apache2 status
â apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
  Drop-In: /lib/systemd/system/apache2.service.d
           ââapache2-systemd.conf
   Active: active (running) since Thu 2018-11-22 02:56:48 UTC; 28min ago
 Process: 4267 ExecStop=/usr/sbin/apachectl stop (code=exited, status=0/SUCCESS)
 Process: 11567 ExecReload=/usr/sbin/apachectl graceful (code=exited, status=0/SUCCESS)
 Process: 4272 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
 Main PID: 4287 (apache2)
    Tasks: 6 (limit: 1152)
   CGroup: /system.slice/apache2.service
           ââ 4287 /usr/sbin/apache2 -k start
           ââ11576 /usr/sbin/apache2 -k start
           ââ11577 /usr/sbin/apache2 -k start
           ââ11578 /usr/sbin/apache2 -k start
           ââ11579 /usr/sbin/apache2 -k start
           ââ11580 /usr/sbin/apache2 -k start

Nov 22 02:56:48 ip-172-31-15-211 systemd[1]: Stopped The Apache HTTP Server.
Nov 22 02:56:48 ip-172-31-15-211 systemd[1]: Starting The Apache HTTP Server...
Nov 22 02:56:48 ip-172-31-15-211 systemd[1]: Started The Apache HTTP Server.
Nov 22 03:09:11 ip-172-31-15-211 systemd[1]: Reloading The Apache HTTP Server.
Nov 22 03:09:12 ip-172-31-15-211 systemd[1]: Reloaded The Apache HTTP Server.
root@ip-172-31-15-211:~#
```

Nagios Installation (Contd.)

```
root@ip-172-31-15-211:~# service shellinabox status
â shellinabox.service - LSB: Shell In A Box Daemon
   Loaded: loaded (/etc/init.d/shellinabox; generated)
   Active: active (running) since Thu 2018-11-22 02:56:24 UTC; 32min ago
     Docs: man:systemd-sysv-generator(8)
  Process: 2955 ExecStop=/etc/init.d/shellinabox stop (code=exited, status=0/SUCCESS)
  Process: 2962 ExecStart=/etc/init.d/shellinabox start (code=exited, status=0/SUCCESS)
    Tasks: 2 (limit: 1152)
   CGroup: /system.slice/shellinabox.service
           ââ2997 /usr/bin/shellinaboxd -q --background=/var/run/shellinaboxd.pid -c /var/lib/shellinabox -p 7878 -u she
           ââ3003 /usr/bin/shellinaboxd -q --background=/var/run/shellinaboxd.pid -c /var/lib/shellinabox -p 7878 -u she

Nov 22 02:56:24 ip-172-31-15-211 systemd[1]: Stopped LSB: Shell In A Box Daemon.
Nov 22 02:56:24 ip-172-31-15-211 systemd[1]: Starting LSB: Shell In A Box Daemon...
Nov 22 02:56:24 ip-172-31-15-211 systemd[1]: Started LSB: Shell In A Box Daemon.
root@ip-172-31-15-211:~# service mysql status
â mysql.service - MySQL Community Server
   Loaded: loaded (/lib/systemd/system/mysql.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2018-11-22 02:52:51 UTC; 35min ago
 Main PID: 32491 (mysqld)
    Tasks: 30 (limit: 1152)
   CGroup: /system.slice/mysql.service
           ââ32491 /usr/sbin/mysqld --daemonize --pid-file=/run/mysqld/mysqld.pid

Nov 22 02:52:51 ip-172-31-15-211 systemd[1]: Stopped MySQL Community Server.
Nov 22 02:52:51 ip-172-31-15-211 systemd[1]: Starting MySQL Community Server...
Nov 22 02:52:51 ip-172-31-15-211 systemd[1]: Started MySQL Community Server.
root@ip-172-31-15-211:~#
```

Nagios: Account Setup

Nagios XI

Install

Nagios XI Installation

Finalize your Nagios XI installation and step the initial configuration. These settings can be changed later.

Admin Account Settings

Username

nagiosadmin

Password

nagiosadmin

Full Name

Nagios Administrator

Email Address

root@localhost

Admin Notification Settings

☒ Send this account email notifications ?

[Advanced email notification settings](#)

Back

Finish Install

Nagios XI

[About](#) | [Legal](#) | Copyright © 2008-2018 Nagios Enterprises, LLC

©Simplilearn. All rights reserved.

simplilearn

Nagios: Dashboard

Nagios XI

HomeViewsDashboardsReportsConfigureToolsHelpAdmin

Notice: This trial copy of Nagios XI will expire in 60 days. [Purchase a License Now](#) or [Enter your license key.](#)

Quick View

Home Dashboard

Tactical Overview

Birdseye

Operations Center

Operations Screen

Open Service Problems

Open Host Problems

All Service Problems

All Host Problems

Network Outages

Details

Service Status

Host Status

Hostgroup Summary

Hostgroup Overview

Hostgroup Grid

Servicegroup Summary

Servicegroup Overview

Servicegroup Grid

BPI

Metrics

Graphs

Performance Graphs

Graph Explorer

Maps

BBmap

Hypermap

Minemap

NagVis

Network Status Map

Home Dashboard

Getting Started Guide

Common Tasks:

- [Change your account settings](#)
Change your account password and general preferences.
- [Change your notifications settings](#)
Change how and when you receive alert notifications.
- [Configure your monitoring setup](#)
Add or modify items to be monitored with easy-to-use wizards.

Getting Started:

- [Learn about XI](#)
Learn more about XI and its capabilities.
- [Signup for XI news](#)
Stay informed on the latest updates and happenings for XI.

Host Status Summary

Up	Down	Unreachable	Pending
1	0	0	0
Unhandled		Problems	All
0		0	1

Last Updated: 2018-11-22 04:06:33

Service Status Summary

Ok	Warning	Unknown	Critical	Pending
8	0	0	0	4
Unhandled		Problems		All
0		0		12

Last Updated: 2018-11-22 04:06:33

Administrative Tasks

Task

Initial Setup Tasks:

We're Here To Help!

Our knowledgeable techs are happy to help you with any questions or problems you may have getting Nagios up and running.

Support Forum / Customer Support Forum

Help Resources

Customer Ticket Support Center

Customer Phone

Support: +1 651-204-9102 Ext. 4

Start Monitoring

Run a Config Wizard

Run Auto-Discovery

Nagios XI 5.5.7

Check for Updates

About | Legal | Copyright © 2008-2018 Nagios Enterprises, LLC

©Simplilearn. All rights reserved.

simplilearn

Nagios: Tactical Overview

Tactical Overview



Network Outages
0 Outages
No Blocking Outages



Network Health	
Host Health	100%
Service Health	91%

Last Updated: 2018-11-22 04:07:59



Hosts			
0 Down	0 Unreachable	1 Up	0 Pending
		1 Active	



Services				
1 Critical	0 Warning	0 Unknown	11 Ok	0 Pending
1 Unhandled Problems			11 Active	
1 Active				
1 Soft Problems				



Features									
Flap Detection		Notifications		Event Handlers		Active Checks		Passive Checks	
NABLED	All Services Enabled All Hosts Enabled	NABLED	All Services Enabled All Hosts Enabled	NABLED	All Services Enabled All Hosts Enabled	NABLED	All Services Enabled All Hosts Enabled	NABLED	All Services Enabled All Hosts Enabled

Nagios: Service Status

Service Status

All services

Showing 1-12 of 12 total records

Page 1 of 1 15 Per Page Go

Host	Service	Status	Duration	Attempt	Last Check	Status Information
localhost	Current Load	Ok	5m 51s	1/4	2018-11-22 04:08:22	OK - load average: 0.00, 0.29, 0.47
	Current Users	Ok	5m 26s	1/4	2018-11-22 04:08:47	USERS OK - 1 users currently logged in
	HTTP	Ok	5m 1s	1/4	2018-11-22 04:09:08	HTTP OK: HTTP/1.1 200 OK - 3160 bytes in 0.002 second response time
	PING	Ok	N/A	1/4	2018-11-22 04:04:37	PING OK - Packet loss = 0%, RTA = 0.04 ms
	Root Partition	Ok	N/A	1/4	2018-11-22 04:05:02	DISK OK - free space: / 4233 MB (53.85% inode=86%):
	Service Status - crond	Ok	N/A	1/4	2018-11-22 04:05:52	• cron.service - Regular background program processing daemon
	Service Status - httpd	Ok	N/A	1/4	2018-11-22 04:06:17	• apache2.service - The Apache HTTP Server
	Service Status - mysqld	Ok	N/A	1/4	2018-11-22 04:06:42	• mysql.service - MySQL Community Server
	Service Status - ndo2db	Ok	N/A	1/4	2018-11-22 04:07:07	• ndo2db.service - Nagios Data Out Daemon
	SSH	Ok	N/A	1/4	2018-11-22 04:05:27	SSH OK - OpenSSH_7.6p1 Ubuntu-4ubuntu0.1 (protocol 2.0)
	Swap Usage	Critical	1m 35s	2/4	2018-11-22 04:08:38	SWAP CRITICAL - 0% free (0 MB out of 0 MB) - Swap is either disabled, not present, or of zero size.
	Total Processes	Ok	N/A	1/4	2018-11-22 04:07:53	PROCS OK: 57 processes with STATE = RSZDT

Last Updated: 2018-11-22 04:09:13

Host Status Summary

Up	Down	Unreachable	Pending
1	0	0	0
Unhandled		Problems	All
0		0	1

Last Updated: 2018-11-22 04:08:42

Service Status Summary

Ok	Warning	Unknown	Critical	Pending
11	0	0	1	0
Unhandled		Problems		All
1		1		12

Last Updated: 2018-11-22 04:08:43

Nagios: Host Status

Host Status

All hosts

Showing 1-1 of 1 total records

Host	Status	Duration	Attempt	Last Check	Status Information
localhost	Up	8m 6s	1/10	2018-11-22 04:07:38	OK - 127.0.0.1: rta 0.015ms, lost 0%

Last Updated: 2018-11-22 04:11:04

Page 1 of 1

15 Per Page

Go

Host Status Summary

Up	Down	Unreachable	Pending
1	0	0	0
Unhandled	Problems	All	
0	0	1	

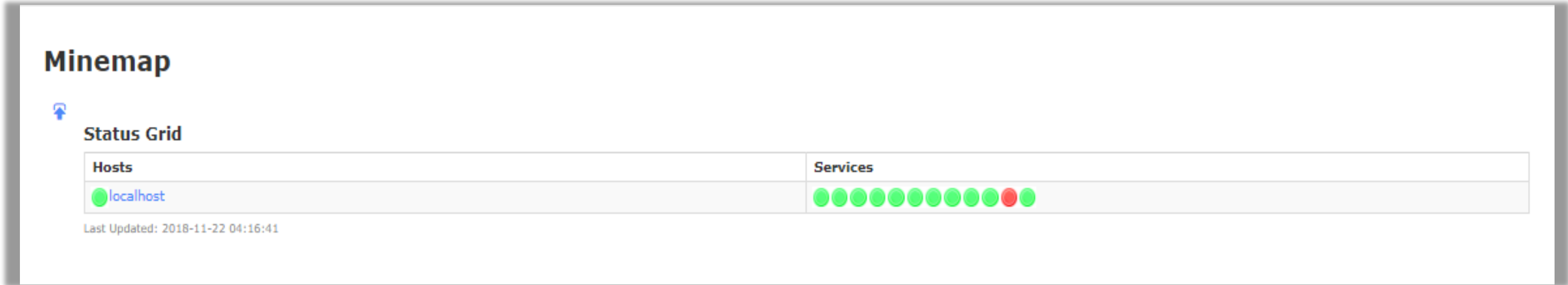
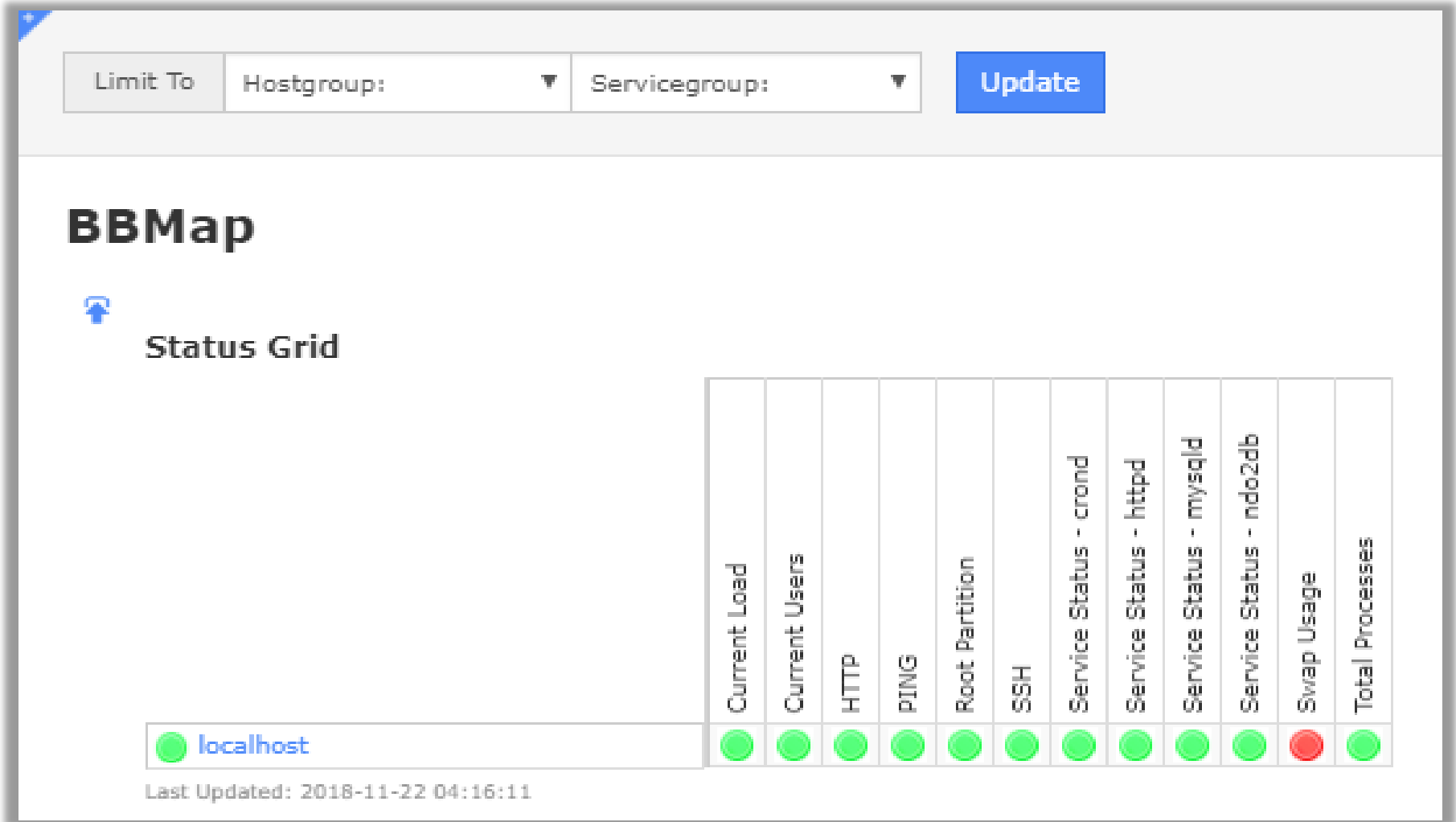
Last Updated: 2018-11-22 04:11:04

Service Status Summary

Ok	Warning	Unknown	Critical	Pending
11	0	0	1	0
Unhandled	Problems	All		
1	1	12		

Last Updated: 2018-11-22 04:11:04

Nagios: Map Diagrams









Nagios: Core Configuration Manager

The screenshot displays the Nagios XI Core Configuration Manager (CCM) interface. The top navigation bar includes links for Home, Views, Dashboards, Reports, Configure, Tools, Help, and Admin. The left sidebar contains a 'Quick Tools' section with links to Core Config Manager, Apply Configuration, Configuration Snapshots, Monitoring Plugins, and Configuration Wizards. Below this is a 'Monitoring' section with links to Hosts, Services, Host Groups, and Service Groups. The 'Alerting' section includes links to Contacts, Contact Groups, Time Periods, Host Escalations, and Service Escalations. The 'Templates' section is expanded, showing links to Commands, Advanced, Tools, and CCM Admin.

The main content area is divided into three sections:

- CCM Object Summary:** A grid of blue boxes showing the count of various objects:
 - 1 Hosts
 - 2 Host Groups
 - 12 Services
 - 0 Service Groups
 - 1 Contacts
 - 2 Contact Groups
 - 130 Commands
 - 0 Host Dependencies
 - 0 Service Dependencies
- Recent Snapshots:** A table showing the history of configuration snapshots.
- Recently Changed Hosts and Services:** A table showing the details of recently modified configuration items.

Date	Snapshot Result	Actions
2018-11-22 04:04:03	Config Ok	  
2018-11-22 04:02:58	Config Ok	  

Host Name	Modified Time
localhost	2018-11-22 04:02:55

Service Name	Config Name	Modified Time
PING	localhost	2018-11-22 04:02:55
Root Partition	localhost	2018-11-22 04:02:55
Current Users	localhost	2018-11-22 04:02:55
Total Processes	localhost	2018-11-22 04:02:55
Current Load	localhost	2018-11-22 04:02:55

Assisted Practice

Duration: 90 mins

Working with Nagios Monitoring Tool

Problem Statement: You are given a project to demonstrate Nagios installation, install plugin, validate the installation, add a node, and validate the node details from Nagios dashboard.

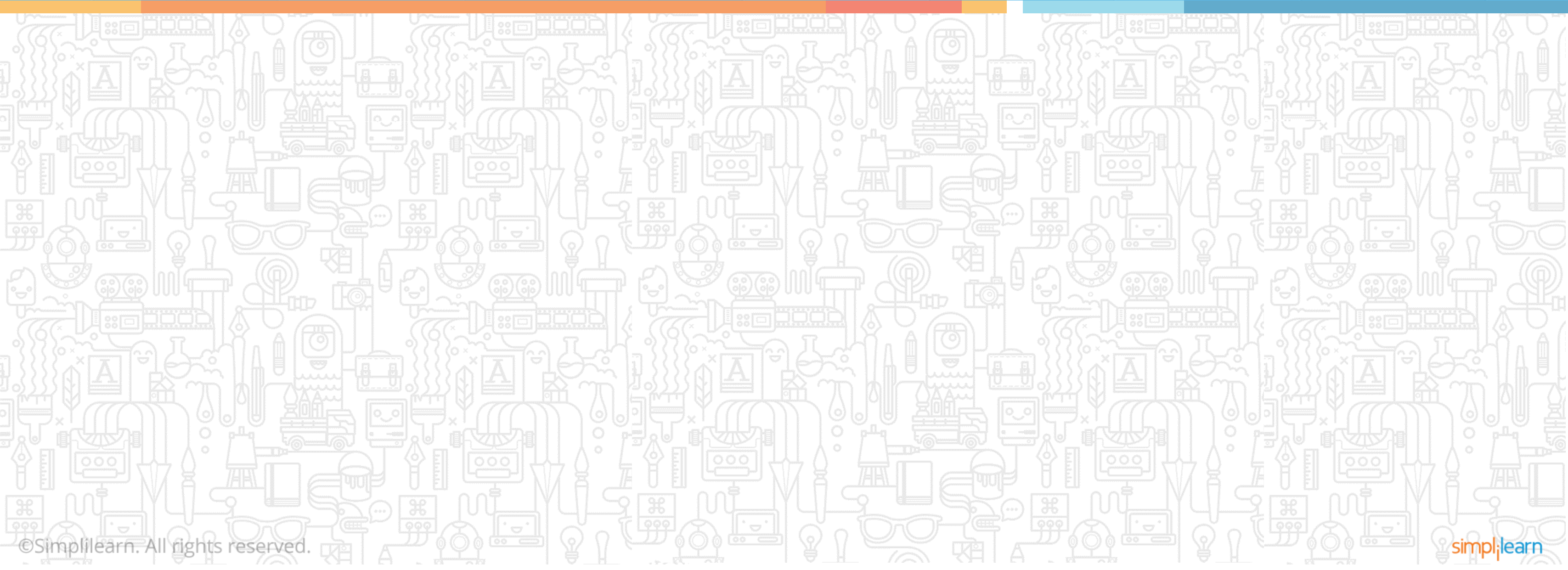
Access: Click on the **Labs** tab on the left side panel of the LMS. Copy or note the username and password that is generated. Click on the **Launch Lab** button. On the page that appears, enter the username and password in the respective fields, and click **Login**.

Assisted Practice: Guidelines to Demonstrate Nagios Monitoring

1. Login to your Ubuntu Lab and open the terminal.
2. Download Nagios plugin source code.
3. Open Admin console of Nagios to install plugins.
4. Validate installation of Nagios plugin.
5. Add node details in Nagios portal.
6. Install Nagios agent on node machine.
7. Validate node details from Nagios dashboard.

Continuous Monitoring

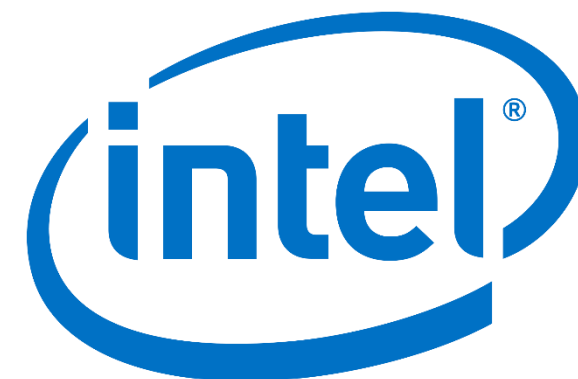
Describe Grafana



Grafana Monitoring System

Grafana is an open-source monitoring system that supports alerts and graphical representation of monitoring stats from various sources.

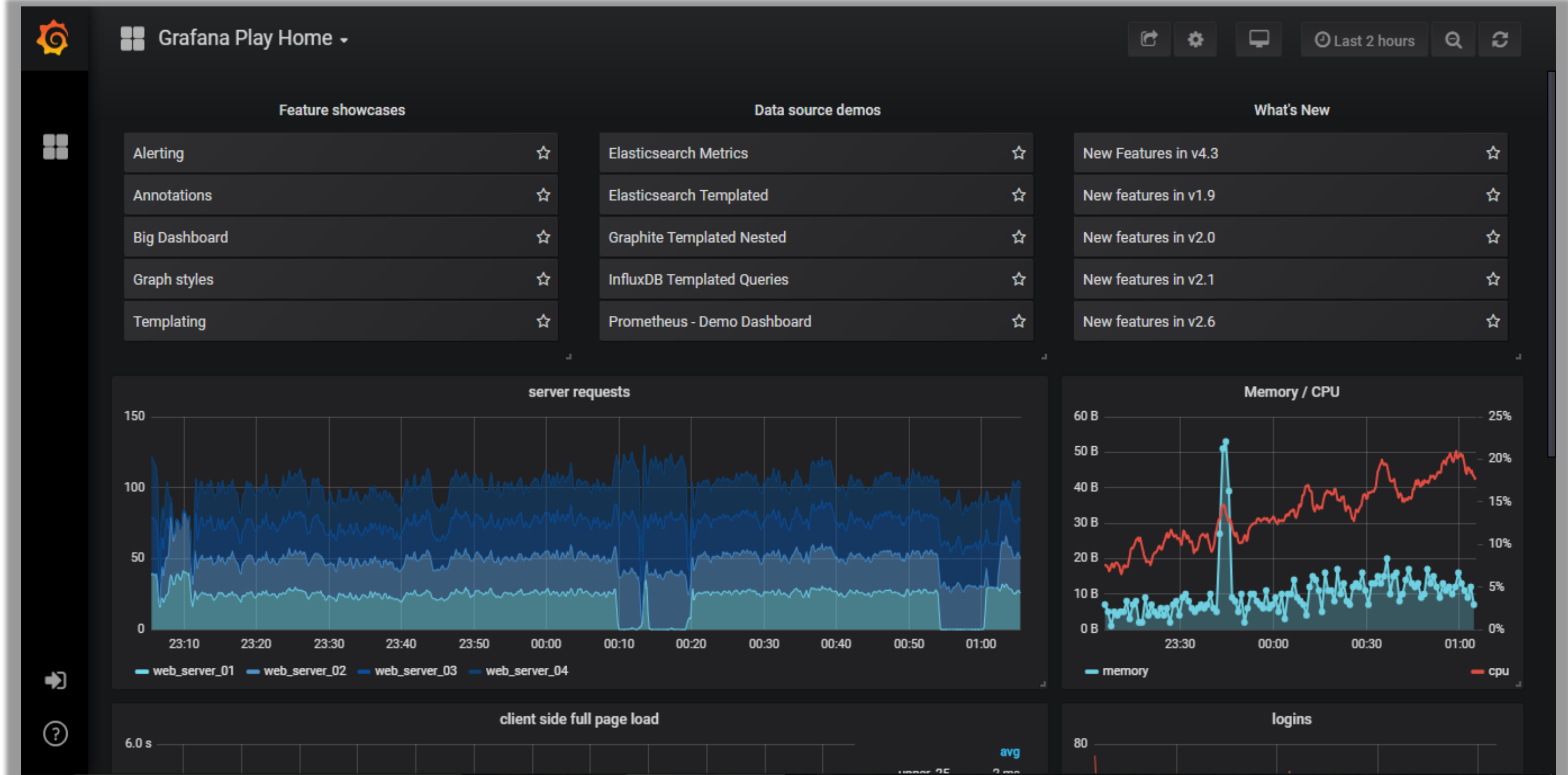
Some of the companies using Grafana:



Features of Grafana Monitoring System

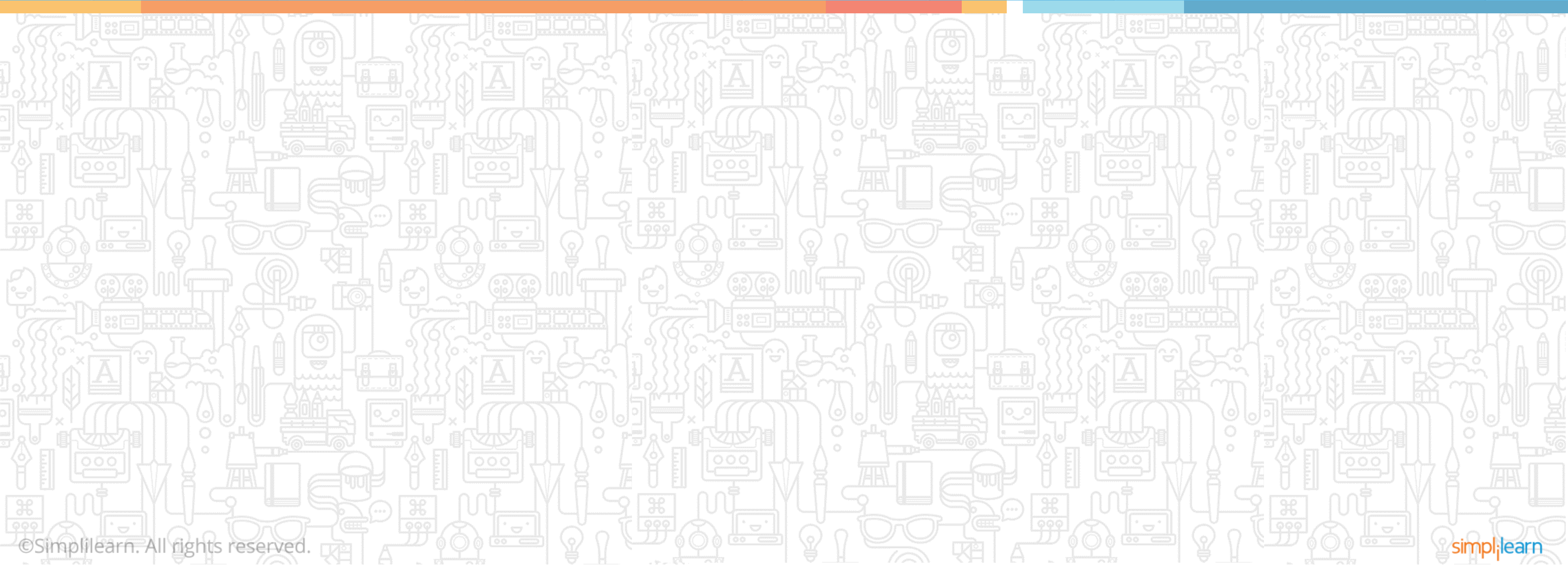


Grafana: Dashboard

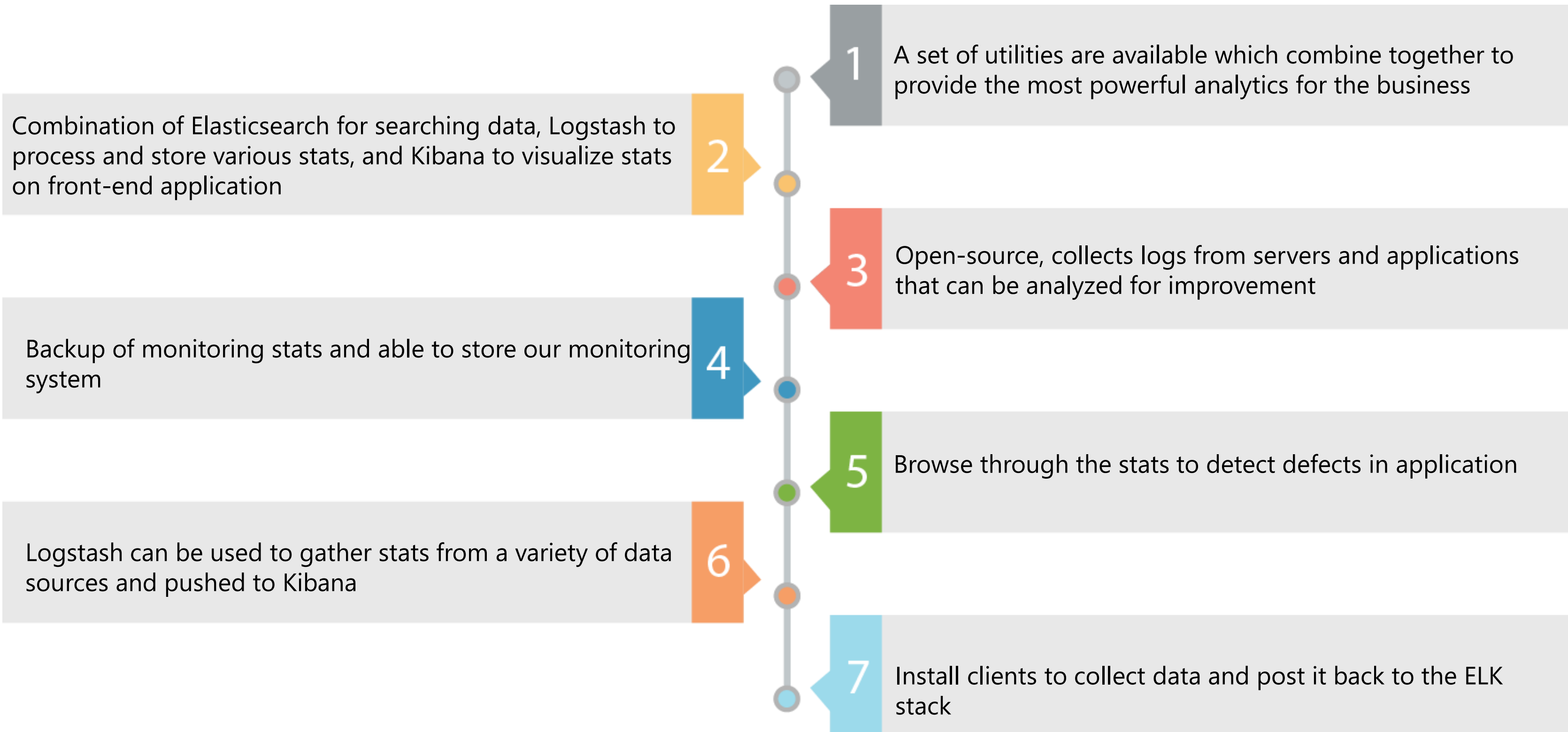


Continuous Monitoring

Describe ELK Stack



ELK Stack



ELK Stack Installation

```
root@ip-172-31-27-81:~# apt install apt-transport-https software-properties-common wget -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
software-properties-common is already the newest version (0.96.24.32.5).
wget is already the newest version (1.19.4-1ubuntu2.1).
apt-transport-https is already the newest version (1.6.6).
0 upgraded, 0 newly installed, 0 to remove and 105 not upgraded.
root@ip-172-31-27-81:~# apt -y install openjdk-8-jdk
Reading package lists... Done
Building dependency tree
Reading state information... Done
openjdk-8-jdk is already the newest version (8u181-b13-1ubuntu0.18.04.1).
0 upgraded, 0 newly installed, 0 to remove and 105 not upgraded.
root@ip-172-31-27-81:~# java -version
openjdk version "1.8.0_181"
OpenJDK Runtime Environment (build 1.8.0_181-8u181-b13-1ubuntu0.18.04.1-b13)
OpenJDK 64-Bit Server VM (build 25.181-b13, mixed mode)
root@ip-172-31-27-81:~#
```

ELK Stack Installation (Contd.)

```
root@ip-172-31-27-81:/etc/elasticsearch# wget -qO - https://artifacts.elastic.co/GPG-KEY-elasticsearch | sudo apt-key add -
OK
root@ip-172-31-27-81:/etc/elasticsearch# echo "deb https://artifacts.elastic.co/packages/5.x/apt stable main" | sudo tee -a
deb https://artifacts.elastic.co/packages/5.x/apt stable main
root@ip-172-31-27-81:/etc/elasticsearch# vi /etc/apt/sources.list.d/elastic-5.x.list
root@ip-172-31-27-81:/etc/elasticsearch# apt install elasticsearch
Reading package lists... Done
Building dependency tree
Reading state information... Done
elasticsearch is already the newest version (5.6.13).
0 upgraded, 0 newly installed, 0 to remove and 105 not upgraded.
root@ip-172-31-27-81:/etc/elasticsearch# service elasticsearch restart
root@ip-172-31-27-81:/etc/elasticsearch# service elasticsearch status
â elasticsearch.service - Elasticsearch
   Loaded: loaded (/usr/lib/systemd/system/elasticsearch.service; disabled; vendor preset: enabled)
   Active: active (running) since Thu 2018-11-22 18:23:57 UTC; 3s ago
     Docs: http://www.elastic.co
   Process: 20146 ExecStartPre=/usr/share/elasticsearch/bin/elasticsearch-systemd-pre-exec (code=exited, status=0/SUCCESS)
  Main PID: 20155 (java)
    Tasks: 14 (limit: 1152)
   CGroup: /system.slice/elasticsearch.service
           ââ20155 /usr/bin/java -Xms300m -Xmx300m -XX:+UseConcMarkSweepGC -XX:CMSInitiatingOccupancyFraction=75 -XX:+UseCMS

Nov 22 18:23:57 ip-172-31-27-81 systemd[1]: Starting Elasticsearch...
Nov 22 18:23:57 ip-172-31-27-81 systemd[1]: Started Elasticsearch.
root@ip-172-31-27-81:/etc/elasticsearch#
```

ELK Stack Installation (Contd.)

```
root@ip-172-31-27-81:/etc/elasticsearch# apt install kibana nginx
Reading package lists... Done
Building dependency tree
Reading state information... Done
nginx is already the newest version (1.14.0-0ubuntu1.2).
kibana is already the newest version (5.6.13).
0 upgraded, 0 newly installed, 0 to remove and 105 not upgraded.
root@ip-172-31-27-81:/etc/elasticsearch# echo "admin:$(openssl passwd -apr1 YourStrongPassword)" | sudo tee -a /etc/nginx/htpasswd.kibana
admin:$apr1$aWn15jgb$w52VfFuc67qTHfTd879gr0
root@ip-172-31-27-81:/etc/elasticsearch# service nginx restart
root@ip-172-31-27-81:/etc/elasticsearch# apt install logstash -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  logstash
0 upgraded, 1 newly installed, 0 to remove and 105 not upgraded.
Need to get 106 MB of archives.
After this operation, 201 MB of additional disk space will be used.
Get:1 https://artifacts.elastic.co/packages/5.x/apt/stable/main/amd64 logstash all 1:5.6.13-1 [106 MB]
Fetched 106 MB in 14s (7415 kB/s)
Selecting previously unselected package logstash.
(Reading database ... 112407 files and directories currently installed.)
Preparing to unpack .../logstash_1%3a5.6.13-1_all.deb ...
Unpacking logstash (1:5.6.13-1) ...
Setting up logstash (1:5.6.13-1) ...
Using provided startup.options file: /etc/logstash/startup.options
Successfully created system startup script for Logstash
root@ip-172-31-27-81:/etc/elasticsearch#
```

Kibana Visualizer Application

The screenshot displays the Kibana Visualizer application interface. On the left is a sidebar with navigation links: Discover, Visualize (active), Dashboard, Timelion, Dev Tools, and Management. The main area shows search results for the query "status:200 AND extension:PHP". The results pane displays two hits. The first hit is a configuration document with fields like buildNum, defaultIndex, _id, _type, and _index. The second hit is a document with a title and a notExpandable field. The interface includes a search bar, filters, and a list of available fields.

kibana 2 hits New Save Open Share

Search... (e.g. status:200 AND extension:PHP) Uses lucene query syntax

Add a filter +

* **_source**

Selected Fields

? _source

Available Fields

- t _id
- t _index
- # _score
- t _type
- t buildNum
- ? defaultIndex
- t fields
- notExpandable
- t title

buildNum: 15661 **defaultIndex:** AWc814zVtHwOWIZSxT5Q **_id:** 5.6.13 **_type:** config **_index:** .kibana **_score:** 1

title: * **notExpandable:** true **fields:** [{"name": "_id", "type": "string", "count": 0, "scripted": false, "searchable": true, "aggregatable": false, "readFromDocValues": false}, {"name": "_index", "type": "string", "count": 0, "scripted": false, "searchable": true, "aggregatable": true, "readFromDocValues": false}, {"name": "_score", "type": "number", "count": 0, "scripted": false, "searchable": false, "aggregatable": false, "readFromDocValues": false}, {"name": "_source", "type": "_source", "count": 0, "scripted": false, "searchable": false, "aggregatable": false, "readFromDocValues": false}, {"name": "_type", "type": "string", "count": 0, "scripted": false, "searchable": true, "aggregatable": false, "readFromDocValues": false}]]

Collapse

Key Takeaways

You are now able to:

- ✓ Explain the role of continuous monitoring tools in DevOps
- ✓ Demonstrate Nagios
- ✓ Describe Grafana
- ✓ Describe ELK Stack
- ✓ Identify the suitable continuous monitoring tool for your organization





Knowledge
Check

1

Which one of the following is a task of monitoring system?

- a. Server Monitoring
- b. Application Monitoring
- c. Network Monitoring
- d. All of the above



Knowledge
Check

1

Which one of the following is a task of monitoring system?

- a. Server Monitoring
- b. Application Monitoring
- c. Network Monitoring
- d. All of the above



The correct answer is **d. All of the above**

Server monitoring, application monitoring, and networking are used for monitoring stats of various infrastructure components.

Knowledge
Check

2

Which one of the following is the valid monitoring agent for Nagios in Linux environment?

- a. NRPE
- b. NSClient ++
- c. RDP
- d. Agent is not required



Knowledge
Check

2

Which one of the following is the valid monitoring agent for Nagios in Linux environment?

- a. NRPE
- b. NSClient ++
- c. RDP
- d. Agent is not required



The correct answer is **a. NRPE**

NRPE agent is installed on various Linux servers to gather various monitoring stats from server.

Knowledge
Check

3

Which one of the following is the data source in ELK Stack?

- a. Elasticsearch
- b. Logstash
- c. Kibana
- d. None of above



Knowledge
Check

3

Which one of the following is the data source in ELK Stack?

- a. Elasticsearch
- b. Logstash
- c. Kibana
- d. None of above



The correct answer is **a. Elasticsearch**

Elasticsearch is the data source used to store monitoring stats from various nodes.

Knowledge
Check

4

Which one of the following is the data pipeline component in ELK Stack?

- a. Elasticsearch
- b. Logstash
- c. Kibana
- d. None of the above



Knowledge
Check

4

Which one of the following is the data pipeline component in ELK Stack?

- a. Elasticsearch
- b. Logstash
- c. Kibana
- d. None of the above



The correct answer is **b. Logstash**

Logstash is the data pipeline component which is used to redirect the logs from nodes to datastore.

Knowledge
Check

5

Which one of the following is the web component in ELK Stack?

- a. Elasticsearch
- b. Logstash
- c. Kibana
- d. None of the above



Knowledge
Check

5

Which one of the following is the web component in ELK Stack?

- a. Elasticsearch
- b. Logstash
- c. Kibana
- d. None of the above



The correct answer is **c. Kibana**

Kibana is the component used to visualize monitoring stats fetched from Elasticsearch.

Lesson-End Project

Duration: 60 mins

Add a Node in Nagios Monitoring Tool

Problem Statement:

Perform the following actions:

- Download Nagios plugin source code.
- Open Admin console of Nagios to install plugin.
- Find the required plugin.
- Install the plugin.
- Validate if it is working.

Access: Click on the **Labs** tab on the left side panel of the LMS. Copy or note the username and password that is generated. Click on the **Launch Lab** button. On the page that appears, enter the username and password in the respective fields, and click **Login**.



Thank You