

# vSphere Monitoring

## Method #1: Telegraf + InfluxDB

- [VMware vSphere - Overview | Grafana Labs](#)
- [Telegraf: VMware vSphere Input Plugin](#)

## Install Telegraf

Download: <https://portal.influxdata.com/downloads/>

```
yum localinstall telegraf-1.18.3-1.x86_64.rpm
```

## Configure Telegraf

Create a configuration file

```
telegraf config > /etc/telegraf/telegraf-vmware.conf
```

```
vi /etc/telegraf/telegraf-vmware.conf
```

Log file

```
...  
[agent]  
...  
logfile = "/var/log/telegraf/telegraf-vmware.log"  
...  
## If set to true, do not set the "host" tag in the telegraf agent.  
omit_hostname = true
```

Output for InfluxDB 1.x

```
# Configuration for sending metrics to InfluxDB 1.x  
[[outputs.influxdb]]  
  urls = ["http://10.10.2.209:8086"]
```

```
database = "vmware"
timeout = "0s"
username = "admin"
password = "dba4mis"
retention_policy = "200d"
```

## Output for InfluxDB 2.x

```
[[outputs.influxdb_v2]]
## The URLs of the InfluxDB cluster nodes.
##
## Multiple URLs can be specified for a single cluster, only ONE of the
## urls will be written to each interval.
## ex: urls = ["https://us-west-2-1.aws.cloud2.influxdata.com"]
urls = ["http://127.0.0.1:8086"]

## Token for authentication.
token = "Your-Token"

## Organization is the name of the organization you wish to write to.
organization = "Your-Org-Name"

## Destination bucket to write into.
bucket = "Tour-Bucket-Name"

## Timeout for HTTP messages.
timeout = "5s"
```

## Input

????: [Telegraf: VMware vSphere Input Plugin](#)

```
#####
#####
# INPUT PLUGINS #
#####
#####

## Realtime instance
```

```
[[inputs.vsphere]]
    interval = "60s"

    ## List of vCenter URLs to be monitored. These three lines must be uncommented
    ## and edited for the plugin to work.
    vcenters = [ "https://vcenter-server-ip/sdk" ]
    username = "admin@vsphere.local"
    password = "ThisPassword"

    # Exclude all historical metrics
    datastore_metric_exclude = ["*"]
    cluster_metric_exclude = ["*"]
    datacenter_metric_exclude = ["*"]
    resourcepool_metric_exclude = ["*"]

    #max_query_metrics = 256
    #timeout = "60s"
    insecure_skip_verify = true
    force_discover_on_init = true

    collect_concurrency = 5
    discover_concurrency = 5

## Historical instance
[[inputs.vsphere]]
    interval = "300s"

    vcenters = [ "https://vcenter-server-ip/sdk" ]
    username = "admin@vsphere.local"
    password = "ThisPassword"

    host_metric_exclude = ["*"] # Exclude realtime metrics
    vm_metric_exclude = ["*"] # Exclude realtime metrics

    insecure_skip_verify = true
    force_discover_on_init = true
    max_query_metrics = 256
    collect_concurrency = 3
```

## Configure systemd

```
cp /usr/lib/systemd/system/telegraf.service /usr/lib/systemd/system/telegraf-vmware.service
sed -i 's/telegraf.conf/telegraf-vmware.conf/g' /usr/lib/systemd/system/telegraf-vmware.service
```

## Startup Telegraf

```
systemctl daemon-reload
systemctl start telegraf-vmware
systemctl enable telegraf-vmware
```

## Configure InfluxDB

### Set the retention policy

```
[root@mm-mon ~]# influx -username admin -password dba4mis
Connected to http://localhost:8086 version 1.8.5
InfluxDB shell version: 1.8.5
> show retention policies on vmware
name  duration shardGroupDuration replicaN default
----  -
autogen 0s    168h0m0s      1      true

> alter retention policy "autogen" on "vmware" duration 200d shard duration 1d
> show retention policies on vmware
name  duration  shardGroupDuration replicaN default
----  -
autogen 4800h0m0s 24h0m0s      1      true
```

## Configure Grafana

1. Add a datasource for InfluxDB
  - Name: VMware
  - Type: InfluxDB
  - Database: vmware
  - Username: <InfluxDB Credential>
  - Password: <InfluxDB Credential>
2. Import the dashboards
  1. <https://grafana.com/grafana/dashboards/8159>
  2. <https://grafana.com/grafana/dashboards/8165>
  3. <https://grafana.com/grafana/dashboards/8168>
  4. <https://grafana.com/grafana/dashboards/8162>

# FAQ

Q: ????? VM ????? Dashboard?

A: ??? InfluxDB ?????? VM ? data????????? Dashboard Settings > Variables > virtualmachine > ?? Update??? Preview of values ?????? VM name?

?? InfluxDB

```
# Check all current VM names
select DISTINCT("vmname") from (select "ready_summation","vmname" from "vsphere_vm_cpu" WHERE time >
now() - 10m)
```

Q: Telegraf ????

“ [inputs.vsphere] Error in plugin: while collecting vm: ServerFaultCode: A specified parameter was not correct: querySpec[0].endTime

A: ???????????

```
force_discover_on_init = true
```

Q: Issue: VMware vSphere - Overview

“ vCenter CPU/RAM ????????

A: ??? > Flux language syntax

? <vcenter-name> ?????? vm ??

```
from(bucket: v.defaultBucket)
  |> range(start: v.timeRangeStart, stop: v.timeRangeStop)
  |> filter(fn: (r) => r["_measurement"] == "vsphere_vm_cpu")
  |> filter(fn: (r) => r["_field"] == "usage_average")
  |> filter(fn: (r) => r["vmname"] == "<vcenter-name>_vCenter")
  |> group(columns: ["vmname"])
  |> aggregateWindow(every: v.windowPeriod, fn: mean, createEmpty: false)
  |> yield(name: "mean")
```

Cluster ???????? cluster name

A: ?? Dashboard > Variables > clustername > Flux language syntax

```
from(bucket: v.defaultBucket)
  |> range(start: v.timeRangeStart, stop: v.timeRangeStop)
  |> filter(fn: (r) => r["_measurement"] == "vsphere_host_cpu")
  |> filter(fn: (r) => r["clustername"] != "")
  |> filter(fn: (r) => r["vcenter"] == "${vcenter}")
  |> keep(columns: ["clustername"])
  |> distinct(column: "clustername")
  |> group()
```

## Method #2: SexiGraf

- Official: <http://www.sexigraf.fr/quickstart/>
- OS-based: Ubuntu 16.04.6 LTS

## Download the OVA appliance

- <http://www.sexigraf.fr/quickstart/>
- <https://github.com/sexibytes/sexigraf>

## vCenter/vSphere Credential for monitor only

vCenter Web Client > ??? > ????? > Single Sign On: ?????? > ??

- ?????: winmon
- ??: xxxx
- ?????: xxxx

vCenter Web Client > ??? > ????? > ?? > ?????

- ???: vsphere.local , ?? winmon
- ??: ??
- ?????: ??

## Deploy the OVA to vCenter/ESXi

??? ESXi 6.5 ????????

Line 163: Unable to parse 'tools.syncTime' for attribute 'key' on element 'Config'.

????: ?? OVF-Tool ??? OVA ????? OVF ?????

# Before

```
<vmw:Config ovf:required="true" vmw:key="tools.syncTime" vmw:value="true"/>
```

# After

```
<vmw:Config ovf:required="false" vmw:key="tools.syncTime" vmw:value="true"/>
```

??????????????

## First to Start the VM

1. SSH Credential: root / Sex!Gr@f

2. Need to manually configure the IP, Edit the `/etc/network/interfaces` .

3. Configure the hostname

```
hostnamectl set-hostname esx-mon
```

4. Configure the timezone and time server

```
timedatectl set-timezone Asia/Taipei
```

vi `/etc/ntp.conf`

```
#pool 0.ubuntu.pool.ntp.org iburst
#pool 1.ubuntu.pool.ntp.org iburst
#pool 2.ubuntu.pool.ntp.org iburst
#pool 3.ubuntu.pool.ntp.org iburst

# Use Ubuntu's ntp server as a fallback.
#pool ntp.ubuntu.com
```

```
# Added the local time server
server 192.168.21.86 prefer iburst
```

## Restart the ntpd

```
systemctl stop ntp
systemctl start ntp

# Check the timeserver
ntpq -p
```

## First to Login the Grafana Web

1. Login: admin / Sex!Gr@f
2. Add the credential to connect to the vCenter server managed: Search > SexiGraf > SexiGraf Web Admin > Credential Store
  - vCenter IP: <vCenter/ESXi IP or FQDN>
  - Username: <Username to login to vCenter/ESXi>
  - Password: <Password to login to vCenter/ESXi>

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Revision #41  
Created 3 June 2021 02:21:56 by Admin  
Updated 31 January 2024 10:35:12 by Admin