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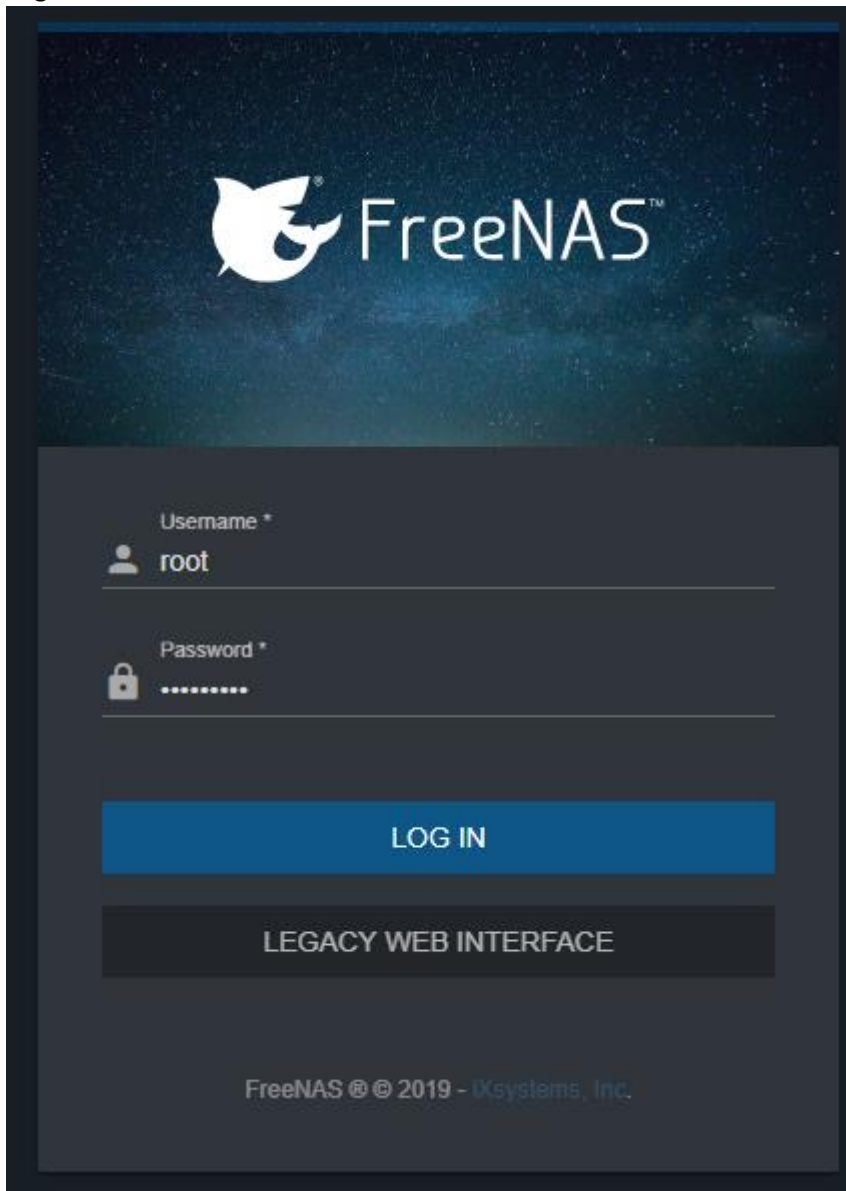
## KONFIGURASI LAYANAN CLOUD COMPUTING PADA FREENAS

### S3 Bucket Service

Contohnya Amazon Web Service, S3 merupakan standarisasi utama penyimpanan berbasis objek

#### KONFIGURASI S# BUCKET SERVICE

1. Login Dashboard FreeNas

The image shows the FreeNAS login interface. At the top, there is a dark blue header with the FreeNAS logo (a white bird-like icon) and the text "FreeNAS™". Below the header, there is a dark grey login form. The form contains two input fields: "Username \*" with a user icon and the text "root", and "Password \*" with a lock icon and a series of dots. Below these fields are two buttons: a blue "LOG IN" button and a dark grey "LEGACY WEB INTERFACE" button. At the bottom of the form, there is a small copyright notice: "FreeNAS © © 2019 - Ixsystems, Inc." data-bbox="178 353 711 884"/>

2. Masuk Menu Storage Pool

Pools ADD

data-cloud	HEALTHY: 8.41 MiB (0%) Used / 2.62 GiB Free	▼
data-jaringan	HEALTHY: 352 KiB (0%) Used / 5.33 GiB Free	▼
data-komputasi	HEALTHY: 640 KiB (0%) Used / 12.11 GiB Free	▼
data-sisdig	HEALTHY: 544 KiB (0%) Used / 831.3 MiB Free	▼

3. Buat Dataset Baru dengan nama s3\_datastorage

Pools ADD

data-cloud HEALTHY: 8.61 MiB (0%) Used / 2.62 GiB Free ^

Name	Type	Used	Available	Compression	Compression Ratio	Readonly	Dedup	Comments	
▼ data-cloud	dataset	8.61 MiB	2.62 GiB	lz4	18.96x	false	off		⋮
▶ iocage	dataset	624 KiB	2.62 GiB	lz4	1.00x	false	off		⋮
▶ s3-datastorage	dataset	88 KiB	2.62 GiB	Inherits (lz4)	1.00x	false	off		⋮

data-jaringan HEALTHY: 352 KiB (0%) Used / 5.33 GiB Free ▼

data-komputasi HEALTHY: 640 KiB (0%) Used / 12.11 GiB Free ▼

data-sisdig HEALTHY: 544 KiB (0%) Used / 831.3 MiB Free ▼

4. Lalu pindah ke service

Filter Service

Name	Running	Start Automatically	Actions
AFP	<input type="checkbox"/>	<input type="checkbox"/>	
Domain Controller	<input type="checkbox"/>	<input type="checkbox"/>	
Dynamic DNS	<input type="checkbox"/>	<input type="checkbox"/>	
FTP	<input type="checkbox"/>	<input type="checkbox"/>	
iSCSI	<input type="checkbox"/>	<input type="checkbox"/>	
LLDP	<input type="checkbox"/>	<input type="checkbox"/>	
netdata	<input type="checkbox"/>	<input type="checkbox"/>	
NFS	<input type="checkbox"/>	<input type="checkbox"/>	
Rsync	<input type="checkbox"/>	<input type="checkbox"/>	
S.M.A.R.T.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
S3	<input type="checkbox"/>	<input type="checkbox"/>	
SMB	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
SNMP	<input type="checkbox"/>	<input type="checkbox"/>	

17 total 1 2

## 5. Konfigurasi

Filter Service			
Name	Running	Start Automatically	Actions
AFP	<input type="checkbox"/>	<input type="checkbox"/>	
Domain Controller	<input type="checkbox"/>	<input type="checkbox"/>	
Dynamic DNS	<input type="checkbox"/>	<input type="checkbox"/>	
FTP	<input type="checkbox"/>	<input type="checkbox"/>	
iSCSI	<input type="checkbox"/>	<input type="checkbox"/>	
LLDP	<input type="checkbox"/>	<input type="checkbox"/>	
netdata	<input type="checkbox"/>	<input type="checkbox"/>	
NFS	<input type="checkbox"/>	<input type="checkbox"/>	
Rsync	<input type="checkbox"/>	<input type="checkbox"/>	
S.M.A.R.T.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
S3	<input type="checkbox"/>	<input type="checkbox"/>	
SMB	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
SNMP	<input type="checkbox"/>	<input type="checkbox"/>	
17 total			

## 6. Konfigurasi S3

IP Address

192.168.64.89

?

Port \*

9000

?

Access Key \*

S3rezalastana

?

Secret Key \*

\*\*\*\*\*

?

Confirm Secret Key \*

\*\*\*\*\*

Disk \*

/mnt/data-cloud/s3-datastorage

?

/mnt

data-cloud

iocage

s3-datastorage

data-jaringan

data-komputasi

data-sisdig

☒ Enable Browser

?

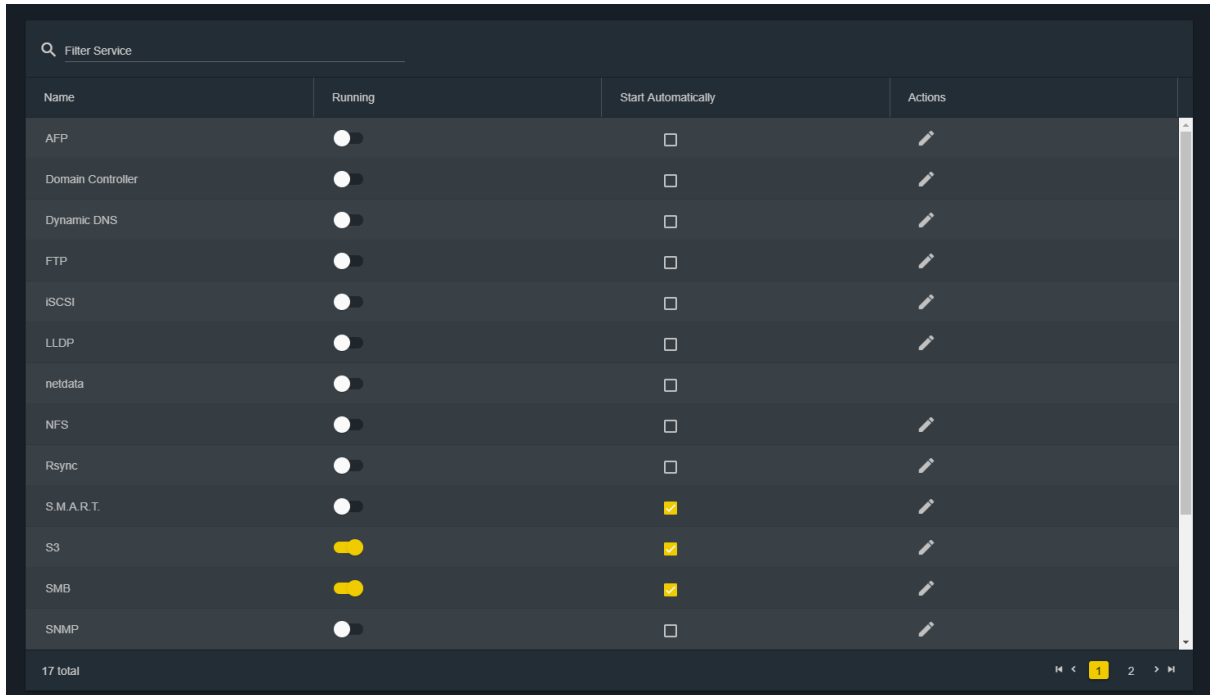
Certificate

?

SAVE

CANCEL

## 7. Aktivasi layanan S3

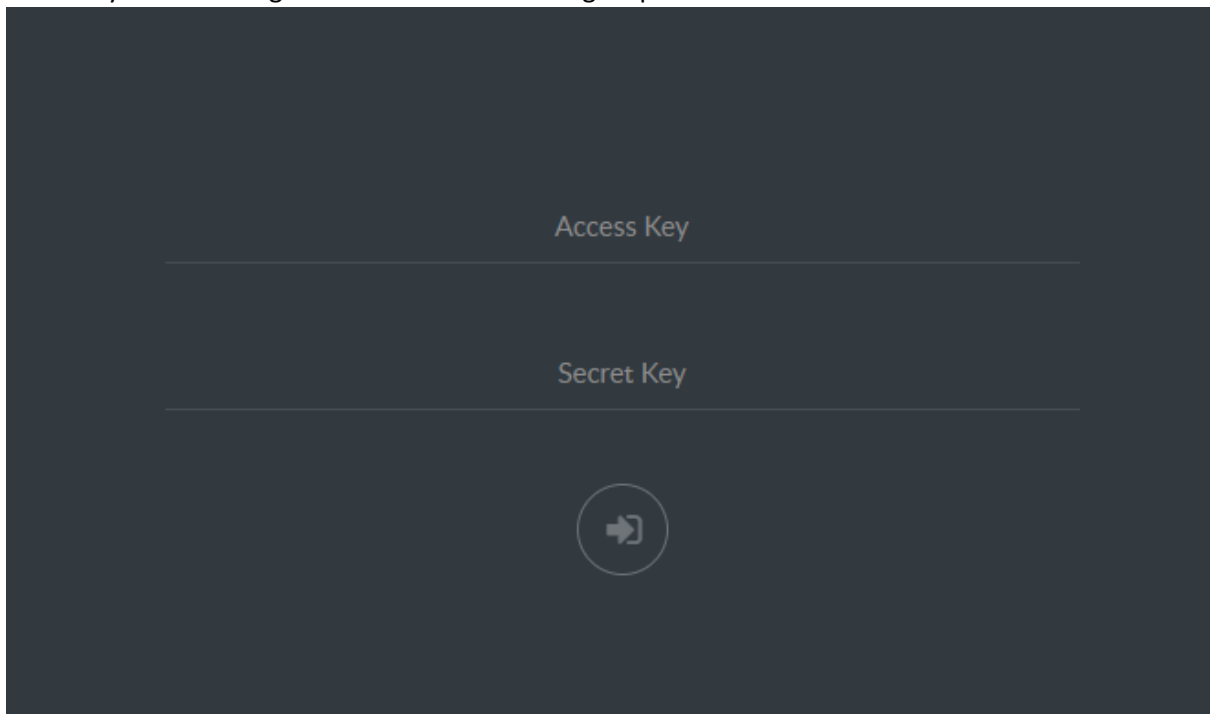


The screenshot shows the 'Filter Service' interface in FreeNAS. It contains a table with columns: Name, Running, Start Automatically, and Actions. The 'S3' service is highlighted with a yellow background, indicating it is selected. The 'Running' column for S3 shows a yellow toggle switch, and the 'Start Automatically' column shows a checked checkbox. Other services like AFP, Domain Controller, Dynamic DNS, FTP, iSCSI, LLDP, neldata, NFS, Rsync, S.M.A.R.T., SMB, and SNMP are listed with their respective status indicators.

Name	Running	Start Automatically	Actions
AFP	<input type="checkbox"/>	<input type="checkbox"/>	
Domain Controller	<input type="checkbox"/>	<input type="checkbox"/>	
Dynamic DNS	<input type="checkbox"/>	<input type="checkbox"/>	
FTP	<input type="checkbox"/>	<input type="checkbox"/>	
iSCSI	<input type="checkbox"/>	<input type="checkbox"/>	
LLDP	<input type="checkbox"/>	<input type="checkbox"/>	
neldata	<input type="checkbox"/>	<input type="checkbox"/>	
NFS	<input type="checkbox"/>	<input type="checkbox"/>	
Rsync	<input type="checkbox"/>	<input type="checkbox"/>	
S.M.A.R.T.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
S3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
SMB	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
SNMP	<input type="checkbox"/>	<input type="checkbox"/>	

17 total

## 8. Akses Layanan S3 Dengan Minlo Web Based dengan Ip FreeNas:9000

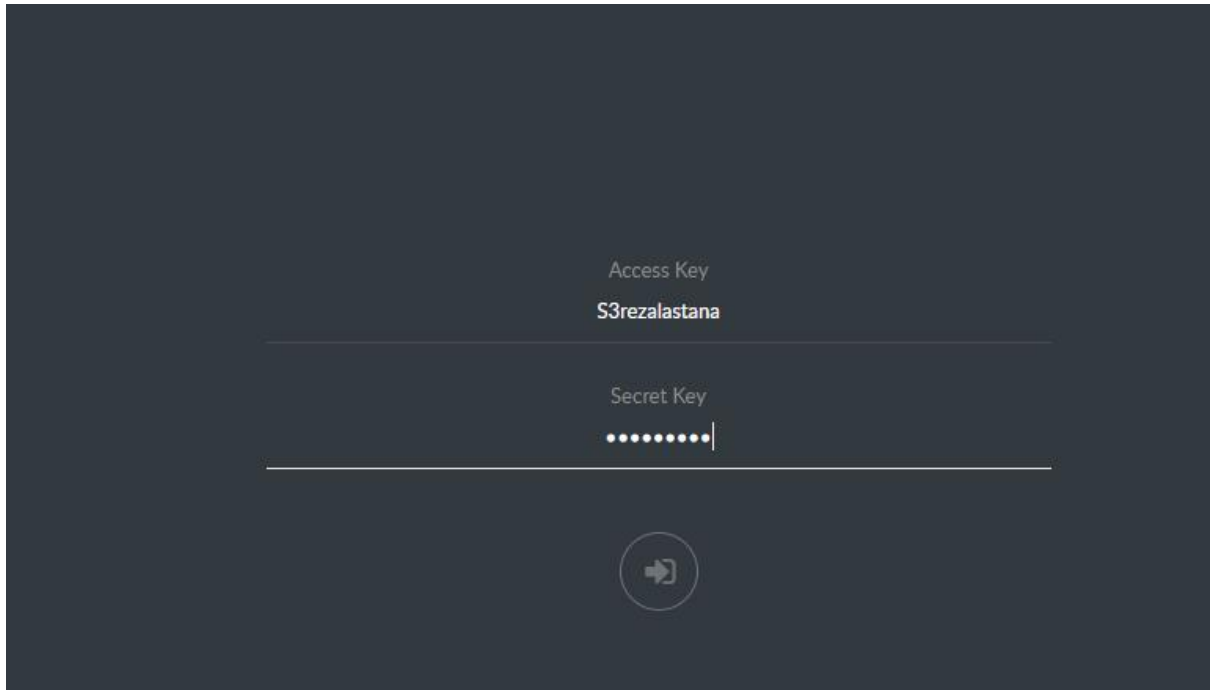


The screenshot shows the Minlo web-based S3 access interface. It features two input fields labeled 'Access Key' and 'Secret Key'. Below these fields is a circular button with a right-pointing arrow and a document icon, likely representing a 'Next' or 'Submit' action.

Access Key

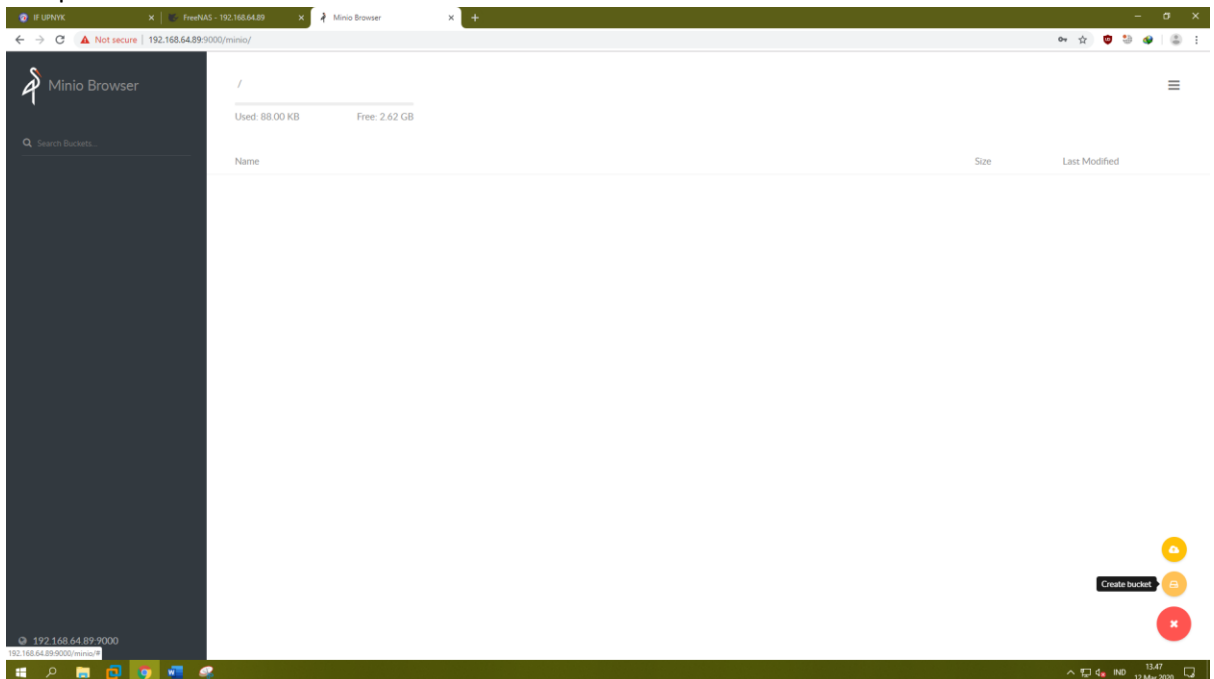
Secret Key

9. Login dengan access key dan secret key yang telah dibuat

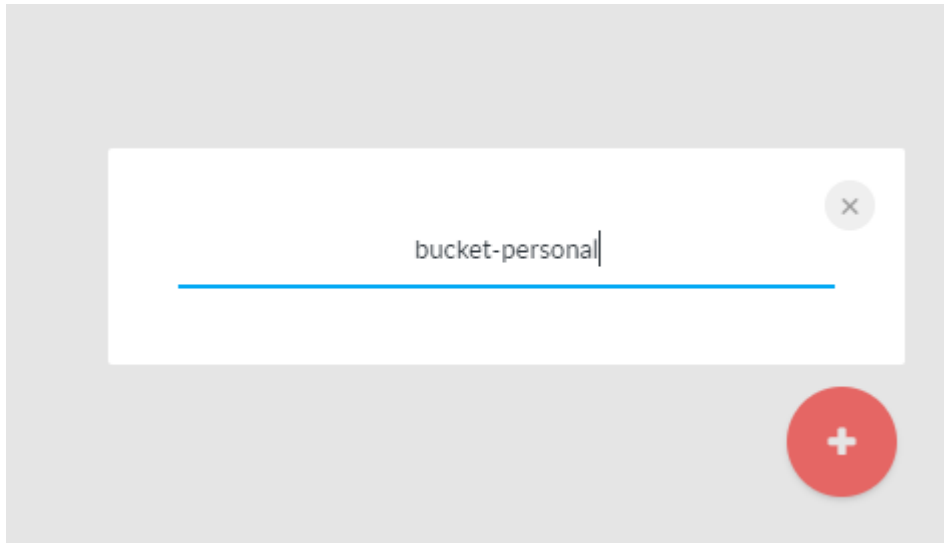


The image shows the Minio login interface. It has a dark blue background. In the center, there are two input fields. The first field is labeled 'Access Key' and contains the text 'S3rezalastana'. The second field is labeled 'Secret Key' and contains a series of dots, indicating a masked password. Below these fields is a large circular button with a right-pointing arrow inside, representing the login action.

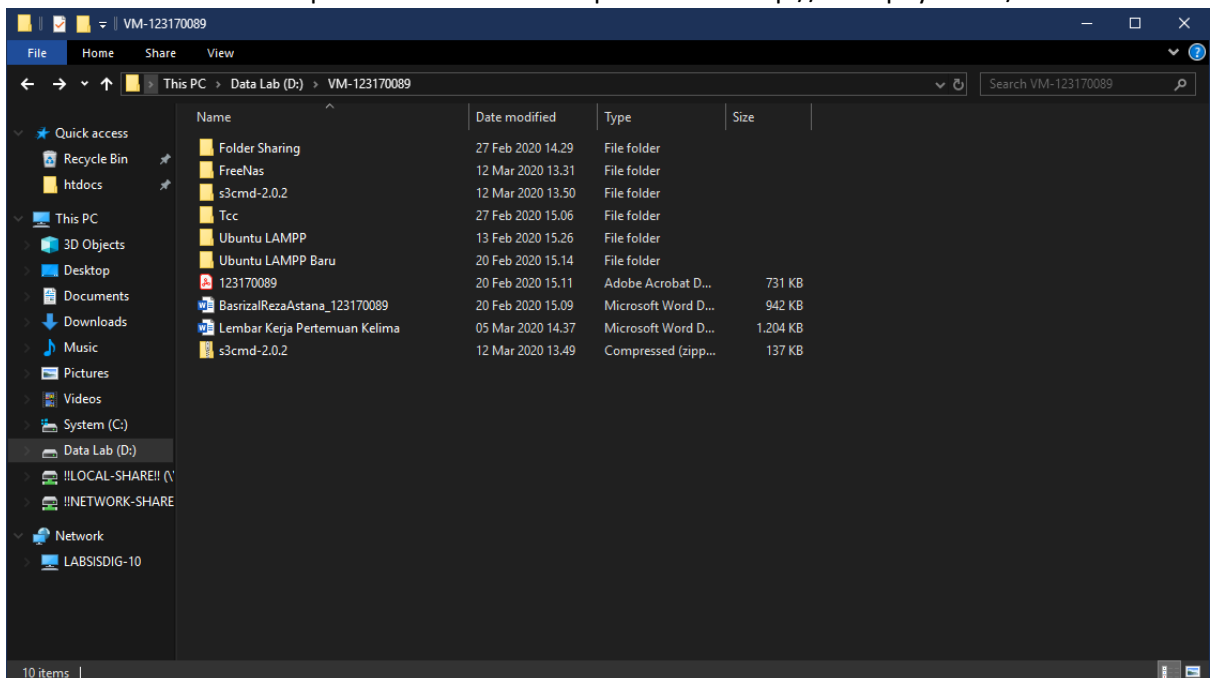
10. Tampilan Dashboard Minio



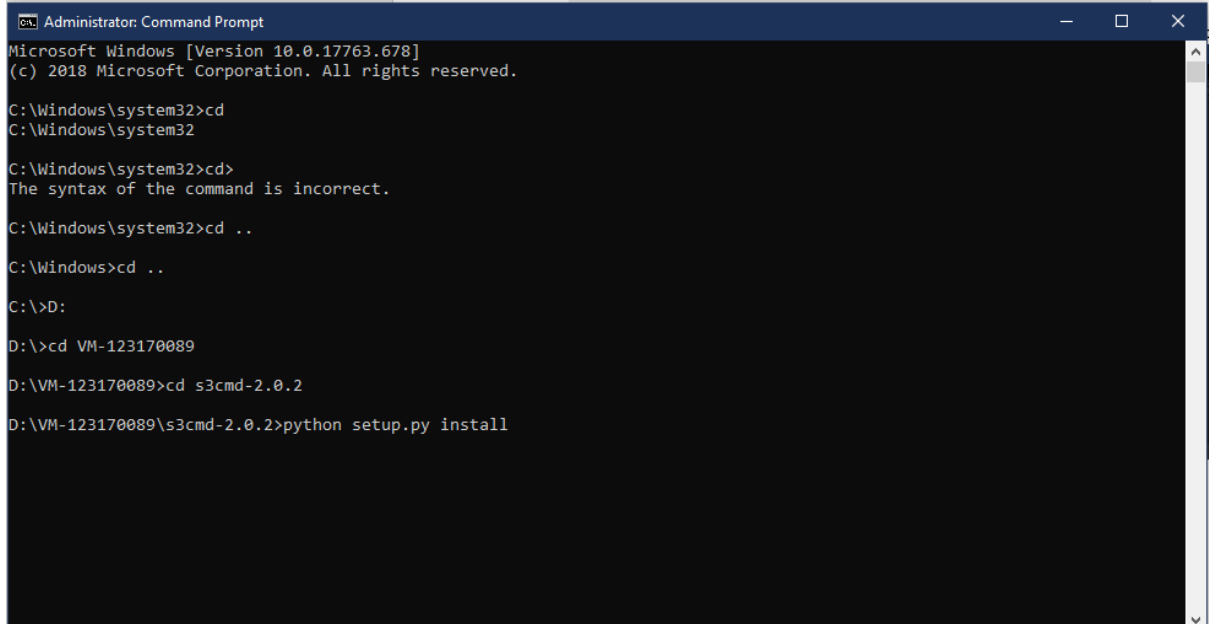
11. Buat bucket-personal dan bucket-public



12. Download s3cmd untuk upload data. Download apada laman <http://link.upnyk.ac.id/s3cmd>



13. Lalu buka CMD run as administrator



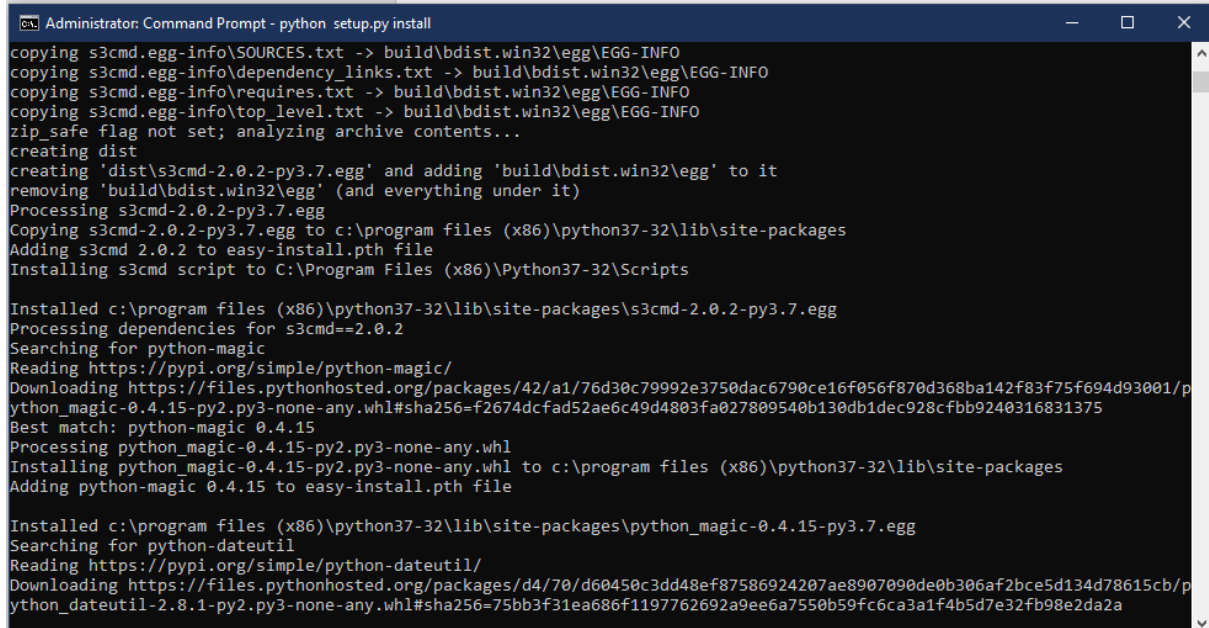
```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.17763.678]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Windows\system32>cd
C:\Windows\system32

C:\Windows\system32>cd>
The syntax of the command is incorrect.

C:\Windows\system32>cd ..
C:\Windows>cd ..
C:\>D:
D:\>cd VM-123170089
D:\VM-123170089>cd s3cmd-2.0.2
D:\VM-123170089\s3cmd-2.0.2>python setup.py install
```

14. Proses Install setup py



```
Administrator: Command Prompt - python setup.py install
copying s3cmd.egg-info\SOURCES.txt -> build\bdist.win32\egg\EGG-INFO
copying s3cmd.egg-info\dependency_links.txt -> build\bdist.win32\egg\EGG-INFO
copying s3cmd.egg-info\requires.txt -> build\bdist.win32\egg\EGG-INFO
copying s3cmd.egg-info\top_level.txt -> build\bdist.win32\egg\EGG-INFO
zip_safe flag not set; analyzing archive contents...
creating dist
creating 'dist\s3cmd-2.0.2-py3.7.egg' and adding 'build\bdist.win32\egg' to it
removing 'build\bdist.win32\egg' (and everything under it)
Processing s3cmd-2.0.2-py3.7.egg
Copying s3cmd-2.0.2-py3.7.egg to c:\program files (x86)\python37-32\lib\site-packages
Adding s3cmd 2.0.2 to easy-install.pth file
Installing s3cmd script to C:\Program Files (x86)\Python37-32\Scripts

Installed c:\program files (x86)\python37-32\lib\site-packages\s3cmd-2.0.2-py3.7.egg
Processing dependencies for s3cmd==2.0.2
Searching for python-magic
Reading https://pypi.org/simple/python-magic/
Downloading https://files.pythonhosted.org/packages/42/a1/76d30c79992e3750dac6790ce16f056f870d368ba142f83f75f694d93001/p
ython_magic-0.4.15-py2.py3-none-any.whl#sha256=f2674dcfad52ae6c49d4803fa027809540b130db1dec928cfbb9240316831375
Best match: python-magic 0.4.15
Processing python_magic-0.4.15-py2.py3-none-any.whl
Installing python_magic-0.4.15-py2.py3-none-any.whl to c:\program files (x86)\python37-32\lib\site-packages
Adding python-magic 0.4.15 to easy-install.pth file

Installed c:\program files (x86)\python37-32\lib\site-packages\python_magic-0.4.15-py3.7.egg
Searching for python-dateutil
Reading https://pypi.org/simple/python-dateutil/
Downloading https://files.pythonhosted.org/packages/d4/70/d60450c3dd48ef87586924207ae8907090de0b306af2bce5d134d78615cb/p
ython_dateutil-2.8.1-py2.py3-none-any.whl#sha256=75bb3f31ea686f1197762692a9ee6a7550b59fc6ca3a1f4b5d7e32fb98e2da2a
```

15. Konfigurasi

16. Konfigurasi s3cmd dengan python s3cmd --configure

## 17. Masukkan acces dan secret key

```
Administrator: Command Prompt - python s3cmd --configure
Adding python-dateutil 2.8.1 to easy-install.pth file

Installed c:\program files (x86)\python37-32\lib\site-packages\python_dateutil-2.8.1-py3.7.egg
Searching for six>=1.5
Reading https://pypi.org/simple/six/
Downloading https://files.pythonhosted.org/packages/65/eb/1f97cb97bfc2390a276969c6fae16075da282f5058082d4cb10c6c5c1dba/six-1.14.0-py2.py3-none-any.whl#sha256=8f3cd2e254d8f793e7f3d6d9df77b92252b52637291d0f0da013c76ea2724b6c
Best match: six 1.14.0
Processing six-1.14.0-py2.py3-none-any.whl
Installing six-1.14.0-py2.py3-none-any.whl to c:\program files (x86)\python37-32\lib\site-packages
Adding six 1.14.0 to easy-install.pth file

Installed c:\program files (x86)\python37-32\lib\site-packages\six-1.14.0-py3.7.egg
Finished processing dependencies for s3cmd==2.0.2

D:\VM-123170089\s3cmd-2.0.2>python s3cmd -configure
ERROR: onfigure: None
ERROR: Configuration file not available.
ERROR: Consider using --configure parameter to create one.

D:\VM-123170089\s3cmd-2.0.2>python s3cmd --configure
ERROR: Option --preserve is not yet supported on MS Windows platform. Assuming --no-preserve.
ERROR: Option --progress is not yet supported on MS Windows platform. Assuming --no-progress.

Enter new values or accept defaults in brackets with Enter.
Refer to user manual for detailed description of all options.

Access key and Secret key are your identifiers for Amazon S3. Leave them empty for using the env variables.
Access Key: s3rezalastana
Secret Key: 123170089
```

## 18. Hasil akhir konfigurasi

```
Administrator: Command Prompt - python s3cmd --configure
Access key and Secret key are your identifiers for Amazon S3. Leave them empty for using the env variables.
Access Key [s3rezalastana]: S3rezalastana
Secret Key [123170089]: 123170089
Default Region [US]:

Use "s3.amazonaws.com" for S3 Endpoint and not modify it to the target Amazon S3.
S3 Endpoint [192.168.64.89:9000]: 192.168.64.89:9000

Use "%(bucket)s.s3.amazonaws.com" to the target Amazon S3. "%(bucket)s" and "%(location)s" vars can be used
if the target S3 system supports dns based buckets.
DNS-style bucket+hostname:port template for accessing a bucket [%s.s3.amazonaws.com]:

Encryption password is used to protect your files from reading
by unauthorized persons while in transfer to S3
Encryption password:
Path to GPG program:

When using secure HTTPS protocol all communication with Amazon S3
servers is protected from 3rd party eavesdropping. This method is
slower than plain HTTP, and can only be proxied with Python 2.7 or newer
Use HTTPS protocol [No]: No

On some networks all internet access must go through a HTTP proxy.
Try setting it here if you can't connect to S3 directly
HTTP Proxy server name:

New settings:
  Access Key: S3rezalastana
  Secret Key: 123170089
  Default Region: US
  S3 Endpoint: 192.168.64.89:9000
  DNS-style bucket+hostname:port template for accessing a bucket: %(bucket)s.s3.amazonaws.com
  Encryption password:
  Path to GPG program: None
  Use HTTPS protocol: False
  HTTP Proxy server name:
  HTTP Proxy server port: 0

Test access with supplied credentials? [Y/n] Y
Please wait, attempting to list all buckets...
Success. Your access key and secret key worked fine :-))

Now verifying that encryption works...
Not configured. Never mind.

Save settings? [y/N] Y
```



## 19. Mencoba perintah s3cmd dengan python s3cmd ls

```
Administrator: Command Prompt
S3 Endpoint: 192.168.64.89:9000
DNS-style bucket+hostname:port template for accessing a bucket: %(bucket)s.s3.amazonaws.com
Encryption password:
Path to GPG program: None
Use HTTPS protocol: False
HTTP Proxy server name:
HTTP Proxy server port: 0

Test access with supplied credentials? [Y/n] Y
Please wait, attempting to list all buckets...
Success. Your access key and secret key worked fine :-)
```

Now verifying that encryption works...  
Not configured. Never mind.

Save settings? [y/N] y  
Configuration saved to 'C:\Users\Lab Informatika\AppData\Roaming\s3cmd.ini'

D:\VM-123170089\s3cmd-2.0.2>python s3cmd ls

```
Administrator: Command Prompt
Use HTTPS protocol: False
HTTP Proxy server name:
HTTP Proxy server port: 0

Test access with supplied credentials? [Y/n] Y
Please wait, attempting to list all buckets...
Success. Your access key and secret key worked fine :-)
```

Now verifying that encryption works...  
Not configured. Never mind.

Save settings? [y/N] y  
Configuration saved to 'C:\Users\Lab Informatika\AppData\Roaming\s3cmd.ini'

D:\VM-123170089\s3cmd-2.0.2>python s3cmd ls  
2020-03-12 06:50 s3://bucket-personal  
2020-03-12 06:50 s3://bucket-public

D:\VM-123170089\s3cmd-2.0.2>

20. Dokumentasi s3cmd berada di <https://docs.min.io/docs/s3cmd-with-minio.html>

21. Perintah Upload file dengan mencoba s3://bucket-personal

## FITUR SELANJUTNYA ADALAH NETDATA SERVICE

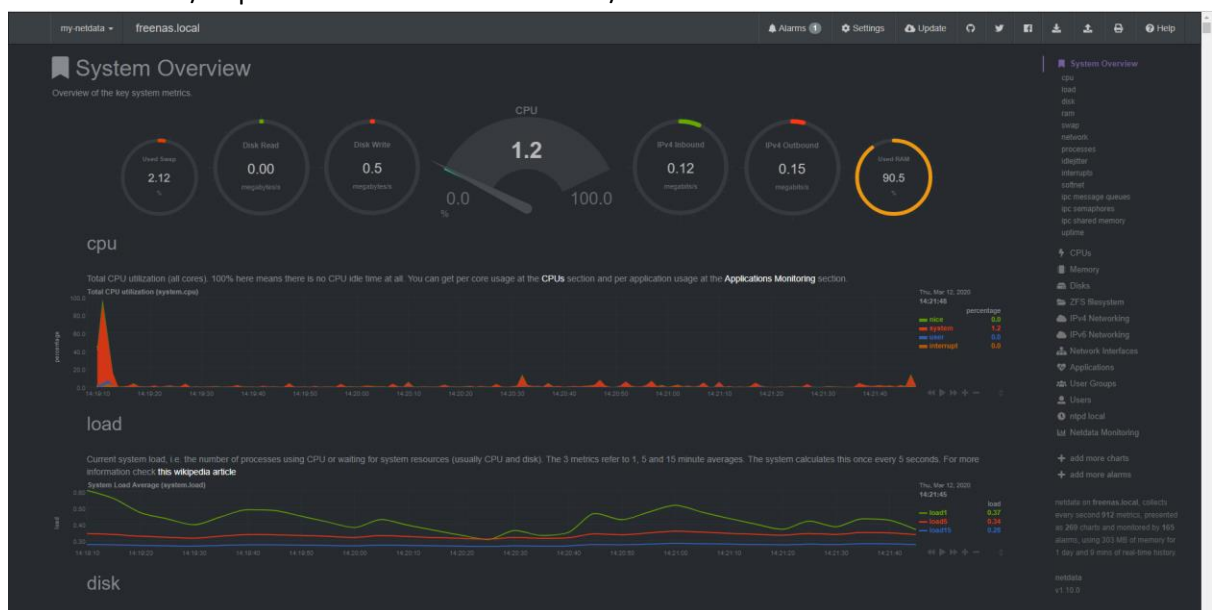
Merupakan sistem layanan monitoring performa sistem secara real-time. Tampilan disediakan dalam bentuk web-based

1. Login
2. Masuk Menu service

### 3. Nyalakan Services netdata

Filter Service			
Name	Running	Start Automatically	Actions
AFP	<input type="checkbox"/>	<input type="checkbox"/>	
Domain Controller	<input type="checkbox"/>	<input type="checkbox"/>	
Dynamic DNS	<input type="checkbox"/>	<input type="checkbox"/>	
FTP	<input type="checkbox"/>	<input type="checkbox"/>	
iSCSI	<input type="checkbox"/>	<input type="checkbox"/>	
LLDP	<input type="checkbox"/>	<input type="checkbox"/>	
netdata	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
NFS	<input type="checkbox"/>	<input type="checkbox"/>	
Rsync	<input type="checkbox"/>	<input type="checkbox"/>	
S.M.A.R.T.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
S3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
SMB	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
17 total			

### 4. Lalu klik action / dapat diakses melalui IP.FREENAS/netdata



### 5. Dokumentasi netdata bisa dibuka di laman <https://netdata.cloud>

**FITUR SELANJUTNYA ADALAH TRANSMISSION WITH JAILS**