
MariBisnis

— Febriyan Adji Saputro (CF-004) —

Hasil Akhir

Website : **<https://web.maribisnis.tik.my.id>**

WebApp : **<https://nextcloud.maribisnis.tik.my.id>**

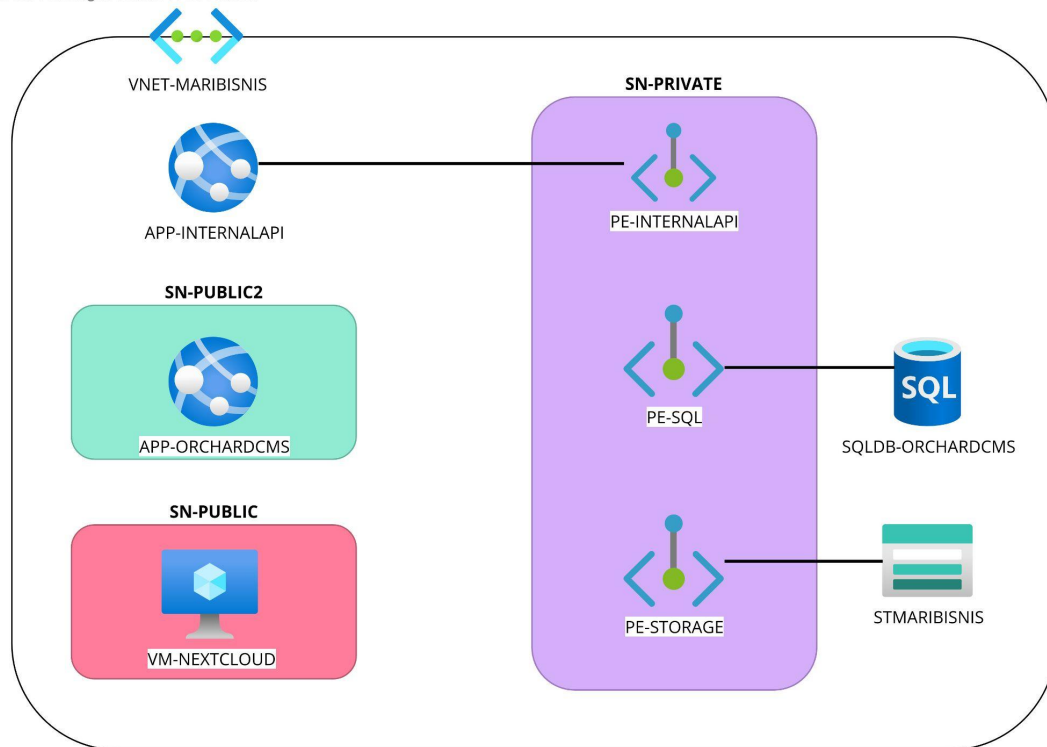
Internal API : **<https://api.maribisnis.tik.my.id>**

MariBisnis Cloud Resources

- **1 Resource Group** → (rg-maribisnis)
- **1 Virtual Network** → (vnet-maribisnis)
- **4 Subnet** → (sn-public, sn-private, sn-public2, AzureBastionSubnet)
- **1 DNS Zone** → (maribisnis.tik.my.id)
- **2 App Service** → (app-orchardcms, app-internalapi)
- **1 Virtual Machine** → (vm-nextcloud)
- **1 SQL Database** → (sqlldb-orchardcms)
- **1 Storage Account** → (stmaribisnis)
- **3 Private Endpoint** → (pe-storage, pe-sql, pe-internalapi)
- **1 Network Security Group** → (nsg-nextcloud)
- **1 Bastion** → (bt-maribisnis)
- **2 Public IP Address** → (pip-nextcloud, pip-bastion)

Diagram

Visual Paradigm Online Free Edition



Visual Paradigm Online Free Edition



MARIBISNIS.TIK.MY.ID (DNS Zone)

- nantinya digunakan untuk membuat subdomain :
 - **web**.maribisnis.tik.my.id
 - **nextcloud**.maribisnis.tik.my.id
 - **api**.maribisnis.tik.my.id



MARIBISNIS.TIK.MY.ID (DNS Zone)

```
→ ~ az network dns zone show -n maribisnis.tik.my.id -o jsonc
{
  "etag": "3459cebb-c382-416f-8d7c-a...",
  "id": "/subscriptions/00b6ba74-43e...
  "location": "global",
  "maxNumberOfRecordSets": 10000,
  "maxNumberOfRecordsPerRecordSet":
  "name": "maribisnis.tik.my.id",
  "nameServers": [
    "ns1-38.azure-dns.com.",
    "ns2-38.azure-dns.net.",
    "ns3-38.azure-dns.org.",
    "ns4-38.azure-dns.info."
  ],
  "numberOfRecordSets": 2,
```

NS	maribisnis	ns4-38.azure-dns.info
NS	maribisnis	ns3-38.azure-dns.org
NS	maribisnis	ns2-38.azure-dns.net
NS	maribisnis	ns1-38.azure-dns.com



MARIBISNIS.TIK.MY.ID (DNS Zone)

maribisnis.tik.my.id

DNS zone

»

[+ Record set](#) [+ Child zone](#) [→ Move](#) [🗑 Delete zone](#) [🔄 Refresh](#)

Tags (Edit) : [Click here to add tags](#)

You can search for record sets that have been loaded on this page. If you don't see what you're looking for, you can try scrolling to allow more record sets to load.

Search record sets

Name	Type	TTL	Value	Alias resource type	Alias target
@	NS	172800	ns1-38.azure-dns.com. ns2-38.azure-dns.net. ns3-38.azure-dns.org. ns4-38.azure-dns.info.		
@	SOA	3600	Email: azuredns-hostmaster.micros... Host: ns1-38.azure-dns.com. Refresh: 3600 Retry: 300 Expire: 2419200 Minimum TTL: 300 Serial number: 1		
api	CNAME	3600	app-internalapi.azurewebsites.net		
nextcloud	A	3600	-	Public IP Address	pip-nextcloud
web	CNAME	3600	app-orchardcms.azurewebsites.net		



VNET-MARIBISNIS (Virtual Network)

- untuk merepresentasikan jaringan lokal kita yg ada di cloud
- menggunakan prefix **10.10.10.0/25**
- memiliki **4** buah subnet :
 - sn-public → 10.10.10.0/**29**
 - sn-private → 10.10.10.8/**29**
 - sn-public2 → 10.10.10.16/**29**
 - AzureBastionSubnet → 10.10.10.64/**26**



VNET-MARIBISNIS (Virtual Network)

```
➔ ~ az network vnet list
```

Name	ResourceGroup	Location	NumSubnets	Prefixes	DnsServers	DDOSProtection
vnet-maribisnis	rg-maribisnis	eastus	5	10.10.10.0/25		False

```
➔ ~
```

```
➔ ~ az network vnet subnet list --vnet-name vnet-maribisnis
```



AddressPrefix	Name	PrivateEndpointNetworkPolicies
10.10.10.0/29	sn-public	Enabled
10.10.10.8/29	sn-private	Disabled
10.10.10.16/29	sn-public2	Enabled
10.10.10.64/26	AzureBastionSubnet	Enabled

```
➔ ~
```










PIP-NEXTCLOUD (Public IP Address)

- bersifat **static**
- memiliki **2** buah availability zone
- sku **standard**

pip-nextcloud  

Public IP address

 Associate  Dissociate  Move   Delete  Refresh

 **Essentials**

Resource group (Move) :	rg-maribisnis	SKU :	Standard
Location :	East US (Zone 2)	Tier :	Regional
Subscription (Move) :	Azure Pass - Sponsorship	IP address :	20.102.42.131



NSG-NEXTCLOUD (Network Security Group)

- deny by default, hanya mengizinkan trafik masuk **http** dan **https**
- nantinya digunakan oleh NIC milik **vm-nextcloud**

nsg-nextcloud Inbound security rules ...						
Network security group						
<div><div>+ Add</div><div> Hide default rules</div><div> Refresh</div><div> Delete</div><div> Give feedback</div></div>						
<div><div> Filter by name</div><div>Port == all</div><div>Protocol == all</div><div>Source == all</div><div>Destination == all</div><div>Action == all</div></div>						
Priority ↑↓	Name ↑↓	Port ↑↓	Protocol ↑↓	Source ↑↓	Destination ↑↓	Action ↑↓
<input type="checkbox"/> 900	open-port-80_443	80,443	Any	Any	Any	Allow
<input type="checkbox"/> 65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
<input type="checkbox"/> 65001	AllowAzureLoadBalancerIn...	Any	Any	AzureLoadBalancer	Any	Allow
<input type="checkbox"/> 65500	DenyAllInBound	Any	Any	Any	Any	Deny






NIC-NEXTCLOUD (Network Interface Card)






- terhubung ke subnet **sn-public**
- terhubung ke ip publik **pip-nextcloud**
- dilindungi oleh **nsg-nextcloud**
- nantinya digunakan oleh **vm-nextcloud**




NIC-NEXTCLOUD (Network Interface Card)

 **nic-nextcloud**  

Network interface

 Move   Delete  Refresh  Enable accelerated networking

 Essentials

Resource group (Move) :	rg-maribisnis	Private IP address :	10.10.10.4
Location :	East US	Public IP address :	20.102.42.131 (pip-nextcloud)
Subscription (Move) :	Azure Pass - Sponsorship	Private IP address (IPv6) :	-
Subscription ID :	00b6ba74-43e0-4dcb-b74a-6f503a0e8a8a	Public IP address (IPv6) :	-
Accelerated networking :	Disabled	Attached to :	vm-nextcloud



VM-NEXTCLOUD (Virtual Machine)

- Menggunakan aplikasi **Nextcloud** yg dideploy di directory `/var/www/nextcloud/`
- Menggunakan sistem operasi **Ubuntu 18 LTS**
- Memiliki **2** buah availability zone
- Ukuran Standard **B1s** (1 vcpu, 1 GiB memory)
- Menggunakan SSL gratis dari **letsencrypt**
- auto redirect http ke https
- Mount file share **nextcloud-data** dari storage account **stmaribisnis** untuk menyimpan data nextcloud yg tidak terstruktur (gambar, video, dll) di dalam directory `/var/www/nextcloud/data`
- menggunakan NIC **nic-nextcloud**



VM-NEXTCLOUD (Virtual Machine)

vm-nextcloud



Virtual machine

Connect Start Restart Stop Capture Delete Refresh Open in mobile CLI / PS Feedback

^ Essentials

Resource group (Move) : [rg-maribisnis](#)

Status : Running

Location : East US (Zone 2)

Subscription (Move) : [Azure Pass - Sponsorship](#)

Subscription ID : 00b6ba74-43e0-4dcb-b74a-6f503a0e8a8a

Availability zone : 2

Operating system : Linux (ubuntu 18.04)

Size : Standard B1s (1 vcpu, 1 GiB memory)

Public IP address : [20.102.42.131](#)

Virtual network/subnet : [vnet-maribisnis/sn-public](#)

DNS name : [Not configured](#)



VM-NEXTCLOUD (Virtual Machine)

```
febriyan@vm-nextcloud:~$ sudo df -h
```

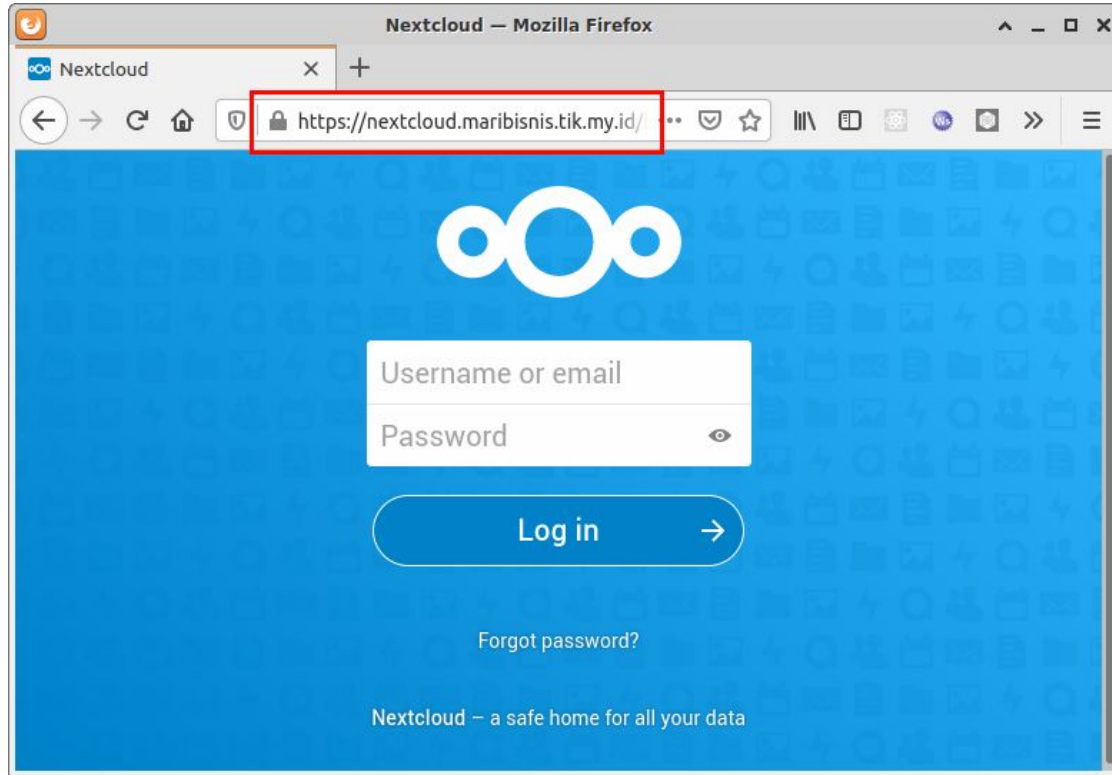
```
Filesystem
```

	Size	Used	Avail	Use%	Mounted on
udev	441M	0	441M	0%	/dev
tmpfs	92M	688K	92M	1%	/run
/dev/sda1	29G	3.6G	26G	13%	/
tmpfs	459M	0	459M	0%	/dev/shm
tmpfs	5.0M	0	5.0M	0%	/run/lock
tmpfs	459M	0	459M	0%	/sys/fs/cgroup
/dev/sda15	105M	4.4M	100M	5%	/boot/efi
//stmaribisnis.file.core.windows.net/nextcloud-data	5.0T	28M	5.0T	1%	/var/www/nextcloud/data
/dev/sdb1	3.9G	16M	3.7G	1%	/mnt
tmpfs	92M	0	92M	0%	/run/user/1000

```
febriyan@vm-nextcloud:~$ █
```




VM-NEXTCLOUD (Virtual Machine)

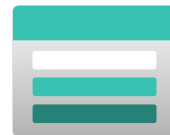






STMARIBISNIS (Storage Account)

- deny by default
- menggunakan sku **Standard ZRS** (Zone-Redundant Storage)
- memiliki 2 buah file share :
 - nextcloud-data → digunakan oleh vm-nextcloud
 - orchardcms-data → digunakan oleh app-orchardcms
- menggunakan private endpoint **pe-storage** agar dapat diletakkan di subnet **sn-private**



STMARIBISNIS (Storage Account)



stmaribisnis  

Storage account

Resource group (move)	: rg-maribisnis	Performance/Access tier	: Standard/Hot
Location	: East US	Replication	: Zone-redundant storage (ZRS)
Subscription (move)	: Azure Pass - Sponsorship	Account kind	: StorageV2 (general purpose v2)
Subscription ID	: 00b6ba74-43e0-4dcb-b74a-6f503a0e8a8a	Provisioning state	: Succeeded
Disk state	: Available	Created	: 11/30/2021, 11:22:32 PM

stmaribisnis | File shares  

Storage account


[+ File share](#) [Refresh](#)


File share settings

Active Directory: [Not configured](#) Soft delete: [7 days](#)

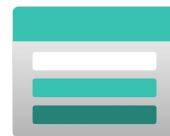
Search file shares by prefix (case-sensitive)







Name

 nextcloud-data

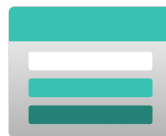
 orchardcms-data

STMARIBISNIS (Storage Account)










nextcloud-data ...	
File share	
Connect Upload Add directory Refresh Delete share Change tier Edit quota	
<input type="text" value="Search files by prefix"/>	
Name	Type
 admin	Directory
 appdata_oc9idg6fenss	Directory
 .htaccess	File
 .ocdata	File
 index.html	File
 nextcloud.log	File




STMARIBISNIS (Storage Account)



orchardcms-data ...

File share



 Connect  Upload  Add directory  Refresh  Delete share  Change tier  Edit quota

Name	Type
 logs	Directory
 Sites	Directory
 tenants.json	File









PIP-BASTION (Public IP Address)

- bersifat **static**
- sku **standard**

pip-bastion  

Public IP address

 Associate  Dissociate  Move  Delete  Refresh

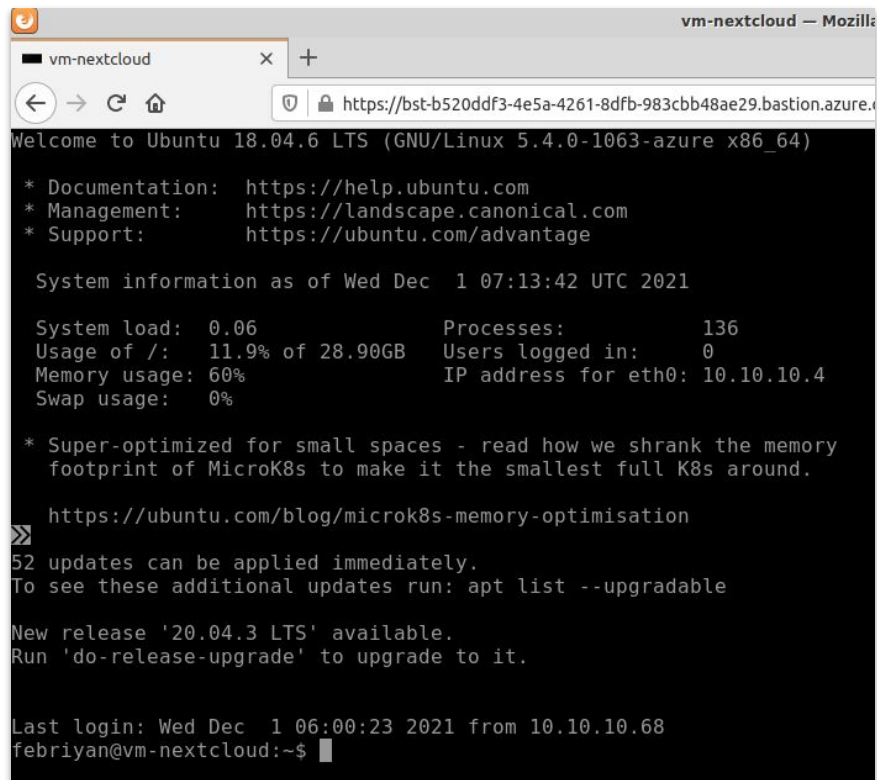
 Essentials

Resource group (Move)	: rg-maribisnis	SKU	: Standard
Location	: East US	Tier	: Regional
Subscription (Move)	: Azure Pass - Sponsorship	IP address	: 20.102.66.17

BT-MARIBISNIS (Bastion)

- digunakan untuk meremot **vm-nextcloud** melalui SSH
- menggunakan ip publik **pip-bastion**
- menggunakan subnet **AzureBastionSubnet**

BT-MARIBISNIS (Bastion)



The image shows a terminal window titled "vm-nextcloud" with a Mozilla browser interface at the top. The terminal output displays the Ubuntu 18.04.6 LTS boot message, system information, and update notifications. The system is running on a VM named "vm-nextcloud" with IP address 10.10.10.4. The terminal shows the following text:

```
Welcome to Ubuntu 18.04.6 LTS (GNU/Linux 5.4.0-1063-azure x86_64)

* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:        https://ubuntu.com/advantage

System information as of Wed Dec  1 07:13:42 UTC 2021

System load:  0.06               Processes:    136
Usage of /:   11.9% of 28.90GB   Users logged in:  0
Memory usage: 60%               IP address for eth0: 10.10.10.4
Swap usage:   0%

* Super-optimized for small spaces - read how we shrank the memory
  footprint of MicroK8s to make it the smallest full K8s around.

https://ubuntu.com/blog/microk8s-memory-optimisation
>>
52 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

New release '20.04.3 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Wed Dec  1 06:00:23 2021 from 10.10.10.68
febriyan@vm-nextcloud:~$
```




SQL-MARIBISNIS (SQL Server)

- deny by default
- digunakan oleh **app-orchardcms** untuk menyimpan data yg terstruktur
- menggunakan private endpoint **pe-sql** agar dapat diletakkan di subnet **sn-private**
- memiliki 1 buah database : **sqldb-orchardcms**
- database menggunakan model **Serverless**
- database mengaktifkan zone redundancy
- menggunakan edisi **GeneralPurpose** dengan familiy **Gen5**








SQL-MARIBISNIS (SQL Server)

sqldb-orchardcms (sql-maribisnis/sqldb-orchardcms)



SQL database

 Copy  Restore  Export  Set server firewall  Delete  Connect with...  Feedback

^ Essentials

Resource group (Move) : [rg-maribisnis](#)

Status : Online

Location : East US

Subscription (Move) : [Azure Pass - Sponsorship](#)

Server name : [sql-maribisnis.database.windows.net](#)

Connection strings : [Show database connection strings](#)

Pricing tier : [General Purpose: Serverless, Gen5, 1 vCore](#)

Auto-pause delay : [1 hour](#)



APP-ORCHARDCMS (App Service)




- untuk menampung website **web.maribisnis.tik.my.id**
- berbasis **container** yg dibangun dengan framework **ASP.NET**
- image diambil dari docker hub :
orchardproject/orchardcore-cms-linux:latest
- sku **Premium V2 Small**
- auto redirect http ke https
- menggunakan ssl gratis dari azure
- diletakkan di subnet **sn-public2** melalui vnet integration
- Mount file share **orchardcms-data** dari storage account **stmaribisnis**
untuk menyimpan data website yg tidak terstruktur (gambar, video, dll) di
directory **/app/App_Data**



APP-ORCHARDCMS (App Service)

app-orchardcms  

App Service

 Browse  Stop  Swap  Restart  Delete |  Refresh  Get publish profile  Reset publish profile  Share to mobile  Send us your feedback

^ Essentials

Resource group (Move) : [rg-maribisnis](#)

Status : Running

Location : East US


URL : <https://web.maribisnis.tik.my.id>



Health Check : Not Configured

App Service Plan : [appplan-orchardcms \(P1v2: 1\)](#)



APP-ORCHARDCMS (App Service)

 **VNet Integration** ...
app-orchardcms

 Disconnect  Refresh

VNet Details

VNet NAME

vnet-maribisnis

LOCATION

East US

VNet Address Space

Start Address




10.10.10.0


Subnet Details

Subnet NAME

sn-public2

app-orchardcms | Custom domains ...
App Service


 Refresh  Troubleshoot  FAQs

 **Custom Domains**



Configure and manage custom domains assigned to your app [Learn more](#)

IP address: ⓘ
20.49.104.41

Custom Domain Verification ID: ⓘ
F19E22833E361CB11D76E78F41AADB31C5CAC9E80471297F21F312BD876CBC48

HTTPS Only: ⓘ
☒ On
 Add custom domain

Status Filter
☒ All (2) ☐ Not Secure (0) ☐ Secure (2)

SSL STATE	ASSIGNED CUSTOM DOMAINS
 Secure	app-orchardcms.azurewebsites.net
 Secure	web.maribisnis.tik.my.id



APP-ORCHARDCMS (App Service)

Setup — Mozilla Firefox

Setup

Change language English

Please answer a few questions to configure your site.

What is the name of your site?
MariBisnis
This is used as the default title of your pages.

Recipe
Agency
Recipes allow you to setup your site with additional pre-configured options, features and settings out of the box.

Default Time Zone
(GMT+07) Asia/Jakarta (+07:00)
Determines the default time zone used when displaying and editing dates and times.

What type of database to use?
Sql Server
The database is used to store the site's configuration and its contents.

Table Prefix
You can specify a table prefix if you intend to reuse the same database for multiple sites.

Connection string
Server=tcpsql-maribisnis.database.windows.net,1433;Database=sqlldb-orchardcms;User ID=maribisnis;Password=nH64R2ZK97bPDfdj;Encrypt=true;Connection Timeout=
The connection string to your database instance. e.g., Server=localhost;Database=Orchard;User id=username;Password=password

Super User
The super user has all the rights. It should be used only during Setup and for disaster recovery.

User name
admin

Email
febriyan.aji@gmail.com

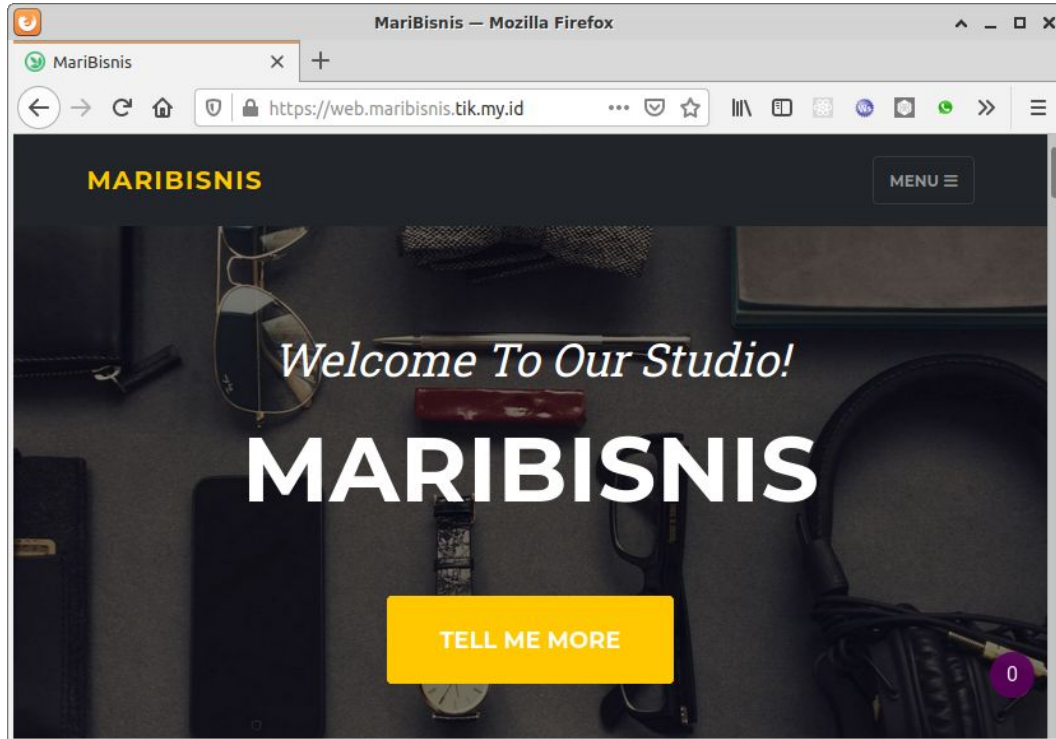
Password
&kqX3Ee@H?Erze\$5

Password Confirmation
&kqX3Ee@H?Erze\$5

Finish Setup



APP-ORCHARDCMS (App Service)







APP-INTERNALAPI (App Service)











- untuk menampung api sederhana yg dibangun menggunakan bahasa **Javascript** dengan framework **Express JS**
- menggunakan alamat **api.maribisnis.tik.my.id**
- menggunakan runtime **node js 14 lts**
- menggunakan ssl gratis dari azure
- sku **Premium V2 Small**
- auto redirect http ke https
- hanya bisa diakses dari dalam virtual network
- menggunakan private endpoint **pe-internalapi** agar dapat diletakkan di subnet **sn-private**




APP-INTERNALAPI (App Service)

app-internalapi  

App Service

 Browse  Stop  Swap  Restart  Delete |  Refresh  Get publish profile  Reset publish profile  Share to mobile  Send us your feedback

 **Essentials**


Resource group (Move)	: rg-maribisnis	URL	: https://api.maribisnis.tik.my.id
Status	: Running	Health Check	: Not Configured
Location	: East US	App Service Plan	: appplan-internalapi (P1v2: 1)



APP-INTERNALAPI (App Service)

app-internalapi | Custom domains ...
App Service

[Refresh](#) [Troubleshoot](#) [FAQs](#)

 **Custom Domains**

Configure and manage custom domains assigned to your app [Learn](#)



IP address: ⓘ
20.49.104.41

Custom Domain Verification ID: ⓘ
F19E22833E361CB11D76E78F41AADB31C5CAC9E80471297F21F312BDB8...


HTTPS Only: ⓘ
☒ On

[+ Add custom domain](#)


Status Filter
[All \(2\)](#) [Not Secure \(0\)](#) [Secure \(2\)](#)

SSL STATE	ASSIGNED CUSTOM DOMAINS
 Secure	app-internalapi.azurewebsites.net
 Secure	api.maribisnis.tik.my.id

[Home](#) > [App Services](#) > [app-internalapi](#) >

 **Private Endpoint connections** ...

[+ Add](#) [Refresh](#) | [✓ Approve](#) [✗ Reject](#) [🗑 Remove](#)

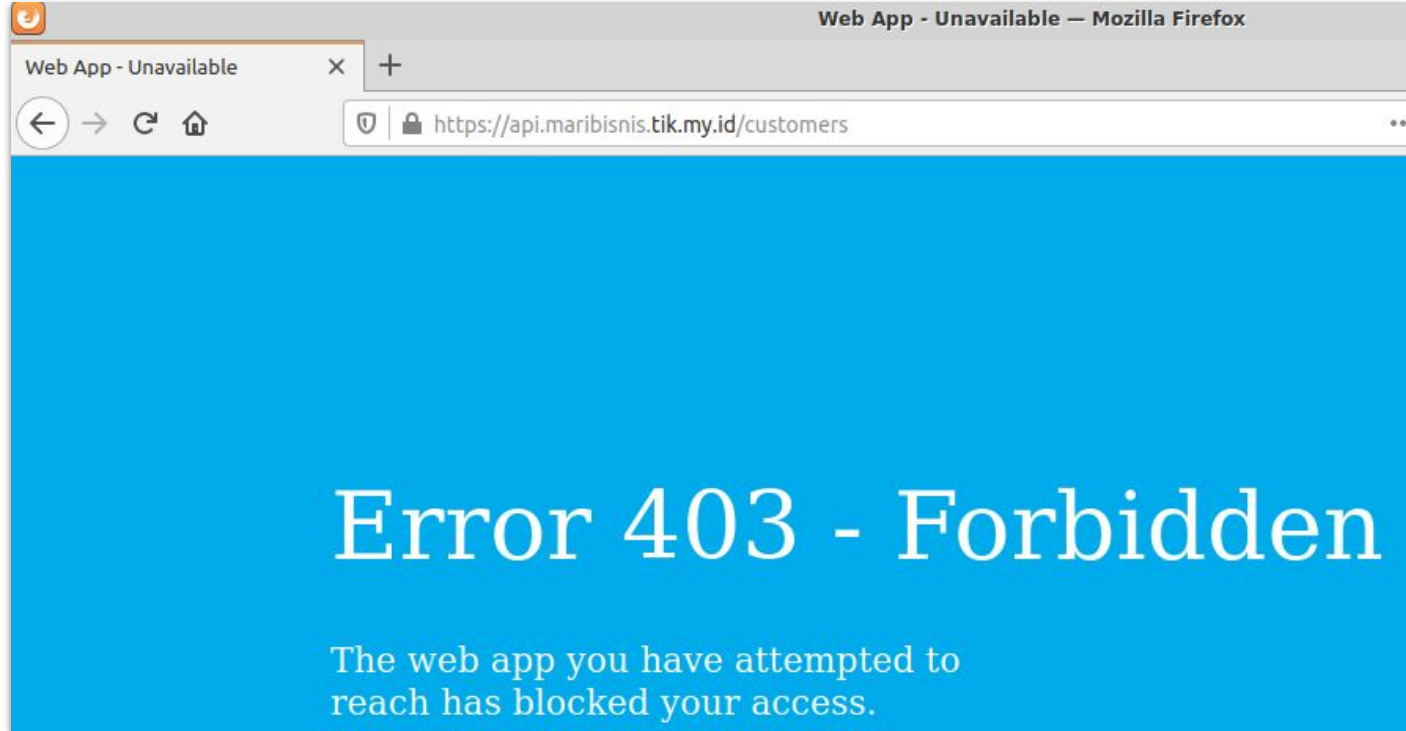
 **Private Endpoint connections**

Private access to services hosted on the Azure platform, keeping your data on the Microsoft network [Learn more](#)

Connection name ↑↓	Connection state ↑↓	Private endpoint ↑↓
internalapi-conn-471876a9-ae06-44de-a35a-73d1227...	Approved	pe-internalapi



APP-INTERNALAPI (App Service)





APP-INTERNALAPI (App Service)

```
febriyan@vm-nextcloud:~$ http https://api.maribisnis.tik.my.id/employees
HTTP/1.1 200 OK
Content-Length: 117
Content-Type: application/json; charset=utf-8
Date: Wed, 01 Dec 2021 05:32:58 GMT
ETag: W/"75-LHzVJTDQ5zCPUXau0wj00D5QSeo"
Set-Cookie: ARRAffinity=f1f67aa0c0e1d7db8690d8a2899591a03a2bc2e4e214e249f84
Set-Cookie: ARRAffinitySameSite=f1f67aa0c0e1d7db8690d8a2899591a03a2bc2e4e21
ribisnis.tik.my.id
X-Powered-By: Express
```

```
[
  {
    "id": 1,
    "name": "Karyawan 1"
  },
  {
    "id": 2,
    "name": "Karyawan 2"
  },
  {
    "id": 3,
    "name": "Karyawan 3"
  },
  {
    "id": 4,
    "name": "Karyawan 4"
  }
]
```

```
febriyan@vm-nextcloud:~$ http https://api.maribisnis.tik.my.id/customers
HTTP/1.1 200 OK
Content-Length: 121
Content-Type: application/json; charset=utf-8
Date: Wed, 01 Dec 2021 05:30:54 GMT
ETag: W/"79-gXmzTdYkkuH3QuxhseZqkrRGhCg"
Set-Cookie: ARRAffinity=f1f67aa0c0e1d7db8690d8a2899591a03a2bc2e4e214e249f84
Set-Cookie: ARRAffinitySameSite=f1f67aa0c0e1d7db8690d8a2899591a03a2bc2e4e21
ribisnis.tik.my.id
X-Powered-By: Express
```

```
[
  {
    "id": 1,
    "name": "Pelanggan 1"
  },
  {
    "id": 2,
    "name": "Pelanggan 2"
  },
  {
    "id": 3,
    "name": "Pelanggan 3"
  },
  {
    "id": 4,
    "name": "Pelanggan 4"
  }
]
```

Terimakasih