

Low Level Design Document

Google Cloud Project

Universitas Muhammadiyah Sidoarjo



Location

Jakarta

Version and Release Date

Version 1.0

1 June 2022



Document Control

Document Information

Customer Name	Universitas Muhammadiyah Sidoarjo
Project Name	Google Cloud Project - IaaS
Document Name	LLD Document - GCP_UMSIDA v1.0

Approval Information

	Company Name	Name
Prepare By	IOH	Rifki Ramadhan
Reviewed By	IOH	Untung Raharjo

Revision History

Version	Date	Name	Remarks
1.0	10 October 2023	Rifki Ramadhan	Initial release

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1. Explanation Document

1.1 Purpose

The purpose of the Low Level Design Document is to provide latest and detailed information related design, configuration and feature of the technology that would be implemented conducted by PT Indosat Tbk to Universitas Muhammadiyah Sidoarjo for the project of Google Cloud.

1.2 Objective

Following are the objective of this document :

1. Create GCP console account.
2. Setup Google Compute Engine
3. Setup CUD
4. Installation ubuntu 23.04
5. Setup VPC and Subnet
6. Setup Firewall
7. Setup IAM
8. Setup Billing Alert
9. Assign Public IP for VM



2. General Configuration

No	Parameters	Value	Remarks
1	Create GCP Account	Done	
2	Provision GCE	Done	
3	OS installation	Done	
4	Setup VPC & Subnet	Done	
5	Setup Firewall	Done	
6	Setup IAM	Done	
7	Setup Budget & Alerts	Done	
8	Setup Public IP	Done	

Table 1. General Configuration



3. Architecture

3.1 Cloud

Architecture: Talenta Tri Tunggal

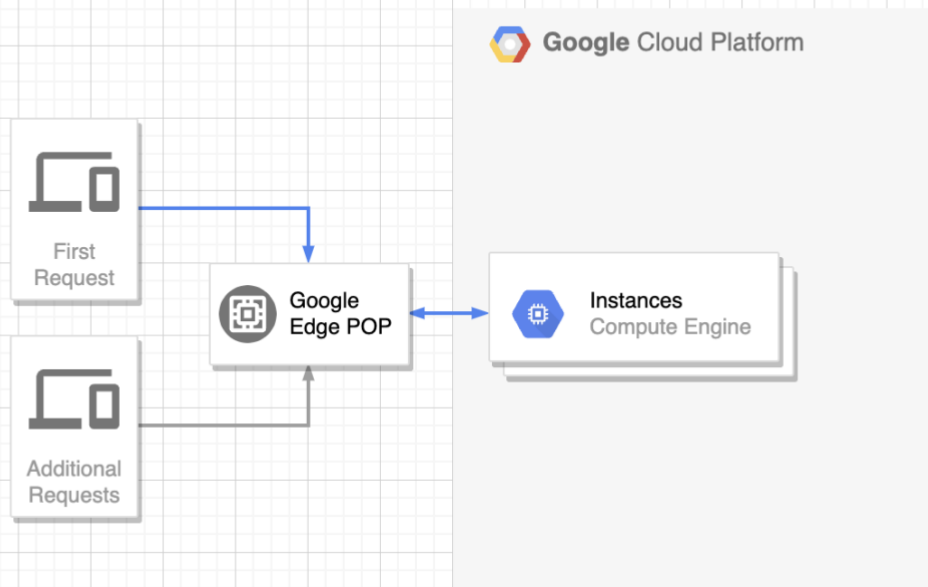


Figure 1. GCP Diagram



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Ingress					Egress				Remarks
No	Hostname	Port	Po	Source Filter	Hostname	Port	Po	Addressing	
1	vm-umsida	22		35.235.240.0/20	vm-umsida	All		0.0.0.0/0	

3.2 Firewall Port Mapping

Table 2. Port Firewall Design





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3.3 Software Selection

No	Hostname	OS	EOS Software	Remarks
1	vm-umsida	Ubuntu 23.04		
2				
3				
4				

Table 3. Software Selection of the Instance





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3.4 IP Addressing

No	Hostname	IP	VPC	Subnet	CIDR	Remarks
1	vm-umsida	10.152.10.2	umsida-vpc	umsida-subnet	/24	Private IP
2	vm-umsida	35.219.37.54	umsida-vpc	umsida-subnet	/32	Public iP (ephemral)
3						

Table 4. IPV4 Addressing





4. Approval Document

Name of Project : Google Cloud Project – Universitas Muhammadiyah Sidoarjo

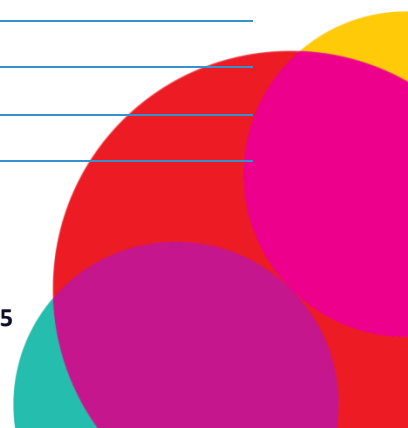
Description : Low Level Design Document

Document Version : 1.0

This Low Level Design Document approval states that the “Customer Name” as the customer has approved the design proposal made by **PT Indosat Tbk**. This implement based on this Low Level Design Document where the information has been provided and approved by **Universitas Muhammadiyah Sidoarjo**.

Company Name	Name	Position	Date
Universitas Muhammadiyah Sidoarjo	Ryan Dewantoro	IT	10 October 2023
IOH	Rifki Ramadhan	Sr. Cloud Specialist	10 October 2023

Note



- Requirement

Info	Value
Nama Pelanggan	Universitas Muhammadiyah Sidoarjo
Service	Google Cloud Platform
Contract	1 Year
PIC Name	Ryan Dewantoro
PIC Contact	089677814176
PIC Mail	riiean@umsida.ac.id / dsti@umsida.ac.id
Domain	umsida.ac.id
SO	2-539206207944
Quote	2-538473203504
CID	CL_11437292_2-6VPHGCSY
Link / Service Ready	10 October 2023
Start Billing Date	10 October 2023

Appendix

- Google Compute Engine

VM instances

Filter Enter property name or value

<input type="checkbox"/>	Status	Name ↑	Zone	In use by	Internal IP	External IP	Connect
<input type="checkbox"/>	✓	vm-umsida	asia-southeast2-a		10.152.10.2 (nic0)	35.219.37.54 (nic0)	SSH ▾ ⋮

- OS & Disk

✓ **vm-umsida**

DETAILS

MONITORING

Properties

Type	Balanced persistent disk
Size ?	20 GB
Architecture	x86/64
Zone	asia-southeast2-a
Labels	None
In use by	vm-umsida
Snapshot schedule	None
Source image	ubuntu-2304-lunar-amd64-v20231003
Encryption type	Google-managed
Consistency group	None

- VPC & Subnet

umsida-vpc

Maximum transmission unit
1460

VPC network ULA internal IPv6 range
Disabled

Subnet creation mode
Custom subnets

Dynamic routing mode
Regional

DNS server policy

Enable DNS API

Applying DNS server policies to the network requires DNS API. This is a one-time enablement per project and may take a few minutes to complete.

[ENABLE API](#)

None

- [SUBNETS](#)
- [STATIC INTERNAL IP ADDRESSES](#)
- [FIREWALLS](#)
- [FIREWALL ENDPOINTS](#)
- [ROUTES](#)
- [VPC NETWORK PEERING](#)
- [PRIVATE SERVICE CONNECTION](#)

Subnets [+ ADD SUBNET](#) [FLOW LOGS](#)

Filter Enter property name or value

<input type="checkbox"/>	Name ↑	Region	Stack Type	Internal IP ranges	External IP ranges	Secondary IPv4 ranges	Gateway	Private Google Access	Flow logs
<input type="checkbox"/>	umsida-subnet	asia-southeast2	IPv4	10.152.10.0/24	None	None	10.152.10.1	Off	Off

• Firewall & IAM

VPC firewall rules

Firewall rules control incoming or outgoing traffic to an instance. By default, incoming traffic from outside your network is blocked. [Learn more](#)

Note: App Engine firewalls are managed in the [App Engine Firewall rules section](#).

SMTP port 25 allowed in this project. [Learn more](#)

[REFRESH](#) [CONFIGURE LOGS](#) [DELETE](#)

Filter Enter property name or value

<input type="checkbox"/>	Name	Type	Targets	Filters	Protocols / ports	Action	Priority	Network ↑	Logs	Hit count	Last hit	Insights
<input type="checkbox"/>	ingress-iap	Ingress	Apply to all	IP ranges: 35.235.240.0/20	all	Allow	1000	umsida-vpc	Off	—	—	

Permissions for project "UMSIDA"

These permissions affect this project and all of its resources. [Learn more](#)

[VIEW BY PRINCIPALS](#) [VIEW BY ROLES](#)

[+ GRANT ACCESS](#) [- REMOVE ACCESS](#)

Filter **umsida** Enter property name or value

<input type="checkbox"/>	Type	Principal ↑	Name	Role	Security insights	Inheritance
<input type="checkbox"/>	Person	dsti@umsida.ac.id		Editor		✎
				IAP-secured Tunnel User		
				Viewer		

• Budget & alerts

Budgets & alerts

[+ CREATE BUDGET](#)

[🗑️ DELETE](#)

Budgets track expenses within a Google Cloud Platform project or billing account. Your budget can be a specified amount or based on previous spend. You can set alerts to notify billing admins and users when a budget goes over a specified amount.

i Setting a budget does not cap resource or API consumption. [Learn more.](#)

Filter Enter property name or value

<input type="checkbox"/>	Budget name ↑	Budget period	Budget type	Applies to	Trigger alerts at	Spend and budget amount
<input type="checkbox"/>	bulan	Monthly	Specified amount	This billing account	50%, 90%, and 100%	<div style="width: 25%; background-color: #4CAF50;"></div>

• GCP UMSIDA Information



Project info



Project name

UMSIDA

Project number

302679034927

Project ID

umsida-nodinless