



LOMBA KOMPETENSI SISWA (LKS) SEKOLAH MENENGAH KEJURUAN TINGKAT PROVINSI JAWA BARAT TAHUN 2025

SOAL PRAKTIKUM (Topik I)

Bidang Lomba CLOUD COMPUTING



PEMERINTAH DAERAH PROVINSI JAWA BARAT DINAS PENDIDIKAN

Jalan Dr. Radjiman No. 6 Telp. (022) 4264813 Fax. (022) 4264881

Website : diskdik.jabarprov.go.id

e-mail: diskdik@jabarprov.go.id/sekretariatdiskdikjabar@gmail.com

BANDUNG - 40171

Topic 1	Deploy Dynamic Web Applications on AWS
Duration	4 Hours
Need	<ol style="list-style-type: none"> 1. AWS IAM Accounts 2. Web Browser 3. Terminal for SSH (Putty/Termius/etc)
Task	<div data-bbox="406 405 844 842" data-label="Diagram"> <pre> graph TD AWS[AWS] --> VPC[VPC] VPC --> VS[Virtual Server] VS --> RDS[Amazon RDS] VS --> NGINX[NGINX] NGINX --> HTTPS[HTTPS] VS --> AP[Akses Publik] VS --> SG[Security Group: SSH, HTTP, MySQL, Custom Port 3000] VS --> PI[Public IP] VS --> PEM[PEM] </pre> </div> <p>A company wants to migrate their Node.js web application to AWS to run data management processes and serve large numbers of users. You are assigned to:</p> <ol style="list-style-type: none"> 1. Create a Virtual Server with type t2.micro with Linux operating system (you can choose any) 2. For development purposes, you are required to enable PORT for SSH, HTTP, HTTPS, MySQL and Custom Port 3000 services. 3. Make sure you have the Public IP Address information and .pem file for the SSH process from your laptop. 4. If you need an Access Key, you are allowed to ask the judge 5. Checkpoint I : Up to here please send the Public IP to the jury to do the DNS Pointing process. Also make sure the jury has confirmed the DNS information to you 6. After you have successfully logged in to the server, you must install nodeJS and NginX. 7. Once successful, you are tasked with creating a MySQL database on the RDS service with the format: db_kota/kabupaten (eg: db_kotajakarta) 8. You don't need to create any table/schema. 9. Make sure you have the database credentials that will be used in the connection configuration at the application layer later.

	<ol style="list-style-type: none"> 10. You can clone the NodeJS-based Web application at the following link: https://github.com/adhimaswisnuyudo/lks-jabar-2025-cloud-computing-crud-app.git 11. Please save the project in /home/your-username/ 12. Configure the Database connection in the file: /home/your-username/your-project/config/db.js according to the connection endpoint that was created previously. 13. Run Web Server with PM2 (ProcessManager) so that it can run as a background process. 14. Checkpoint II Make sure that the website can be accessed publicly by accessing: http://your-public-ip:3000 and can perform CRUD activities 15. Then you are assigned to configure an NginX web server with the server_name city/district.domainname.xyz (as given by the jury) 16. Do a reverse proxy in NginX that points to the NodeJS Server (so that when there is a request on port 80 / http, the system will automatically respond with the NodeJS application) 17. Checkpoint III Make sure that when you access http://your-domain the server will respond with a NodeJS web application (not Hello World NginX) 18. Configure SSL for your website and make sure the URL https://your-domain can be accessed properly (SSL can use any service including certbot / Let's Encrypt) 19. Checkpoint IV Make sure that when accessing http://your-domain, the system will redirect to https://your-domain
Additional information	<p>You are allowed to improvise/improve the task by implementing other features as long as:</p> <ol style="list-style-type: none"> 1. Does not reduce the basic tasks above 2. Do not change/add roles & policies that have been determined 3. No overtime
Output	<ol style="list-style-type: none"> 1. NodeJS-based applications can run CRUD functions and can be accessed via the URL: https://your-domain properly. 2. Take a screenshot of each configuration and provide an easy-to-understand description.

information :

1. If there are any problems related to accounts, roles, policies, etc., please contact the jury.
2. Participants are allowed to improvise tasks taking into account time, ability and without changing the essence of the main task itself
3. Naming each component always uses the contingent name behind it. For example (sensor-light-db-cityJakarta)
4. Participants are allowed to view official AWS documentation and other sites **EXCEPT THOSE OF AI NATURE**
5. Information about Domain Names will be explained on the day of implementation.