

EMQX Cloud Use Case Guidance

The world's leading provider of Managed MQTT Service

EMQ Technologies Co., Ltd.

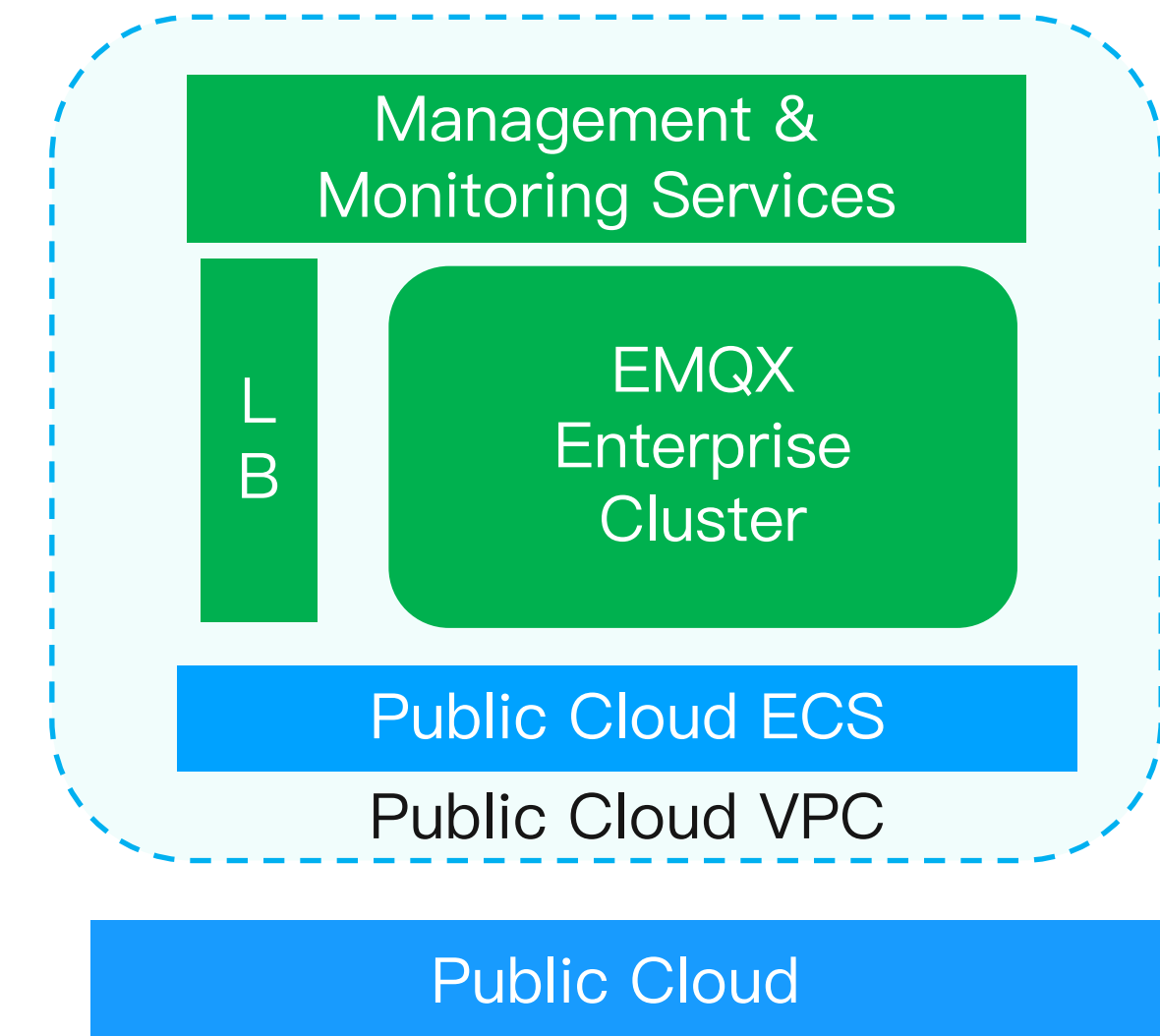
· 2023-6

EMQX Cloud Introduction

What is EMQX Cloud

What is EMQX Cloud

- EMQX Cloud is a fully managed **MQTT 5 public cloud services**;
- EMQX Cloud provides one-stop **operation and maintenance services** for EMQX with our best practice;
- EMQX Cloud provides **dedicated cluster environment** for different user and project;



EMQX Cloud = Public Cloud ECS + Public Cloud Network services + EMQX Enterprise + EMQX Operation and Maintenance services

EMQX Cloud

Fully managed MQTT public cloud services



Standard MQTT v3.1/3.1.1/5.0 protocol and the other IoT protocols support



Dedicated clusters ensure data security and 99.99% SLA



Automated Cluster Deployment and Management through one Simple Click



Multi-project management with RBAC



Built-in high performance rule engine

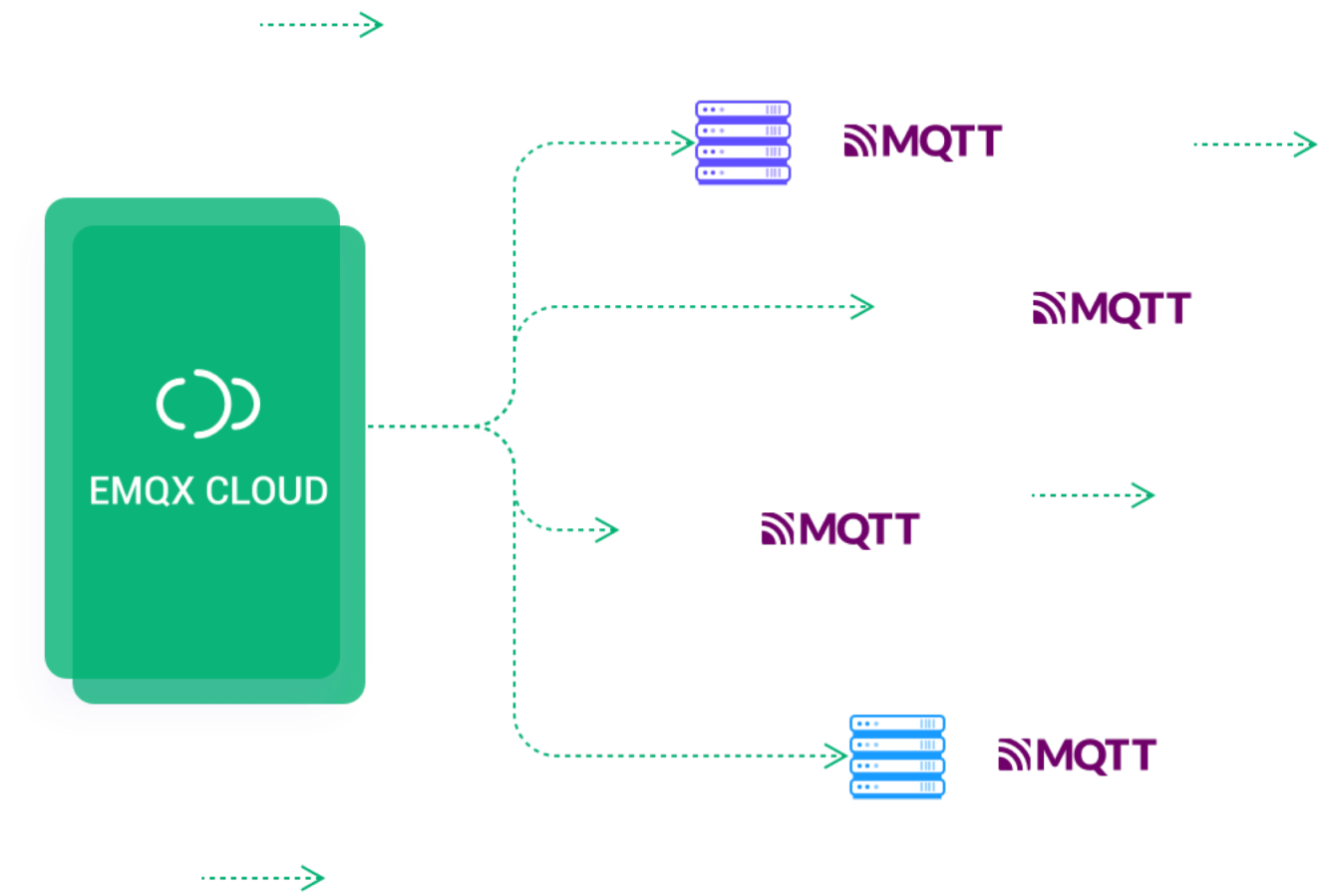


Out of box IoT Data Integration and Enterprise Application Integration capabilities

Fully managed standard MQTT cloud service

Hosted MQTT message middleware cloud service

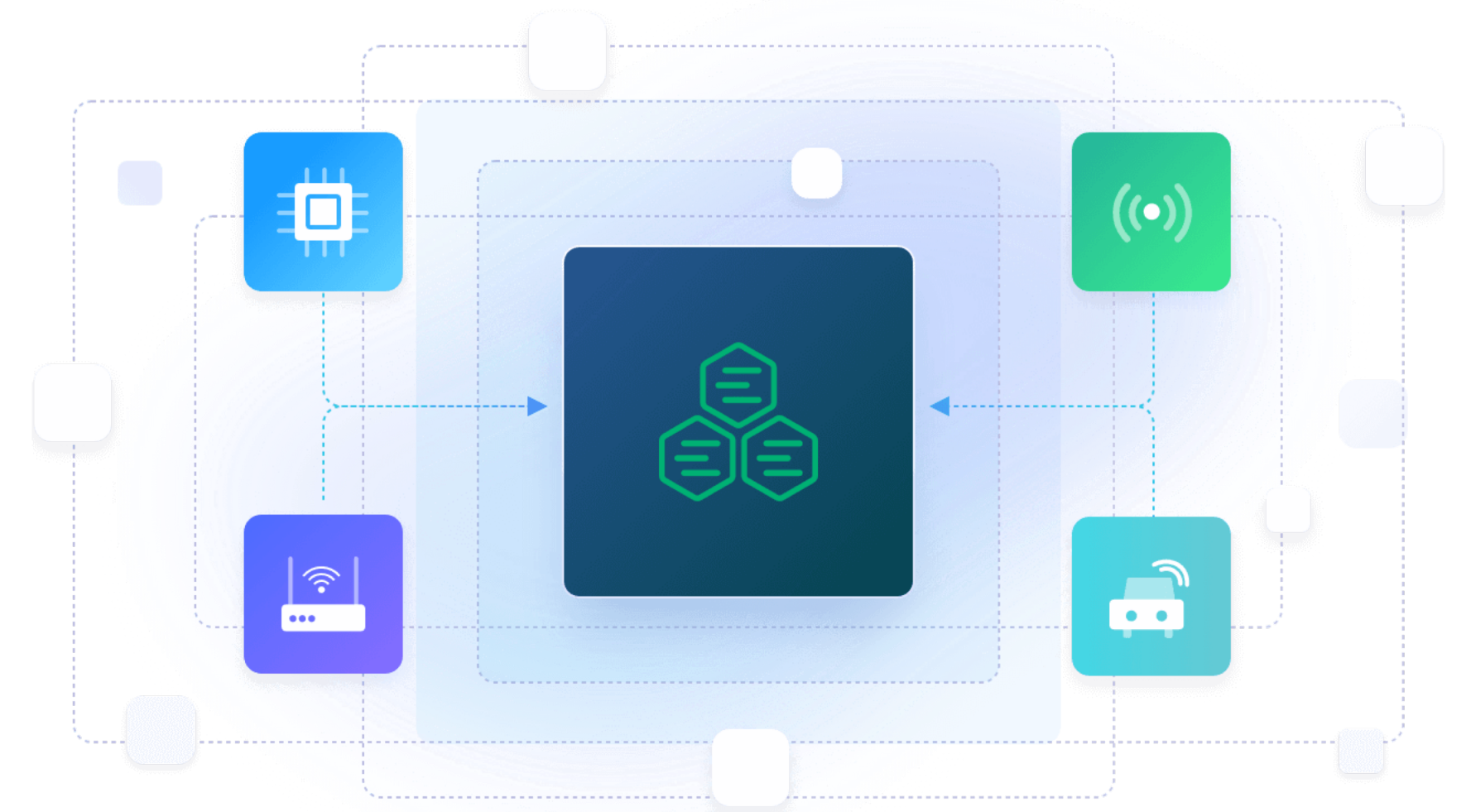
- Standard MQTT v3.1, v3.1.1 and v5.0 protocol support, and Extended IoT protocol (LwM2M/CoAP/MQTT-SN) support;
- One-click deployment, creating a highly available production environment within minutes, accelerating product iteration, and reducing deployment and operation costs;
- Supports standard MQTT SDK in various programming languages, and the device side can be easily connected without being bound by the public cloud platform;



Large scale dedicated EMQX service

High-performance dedicated EMQX cluster service

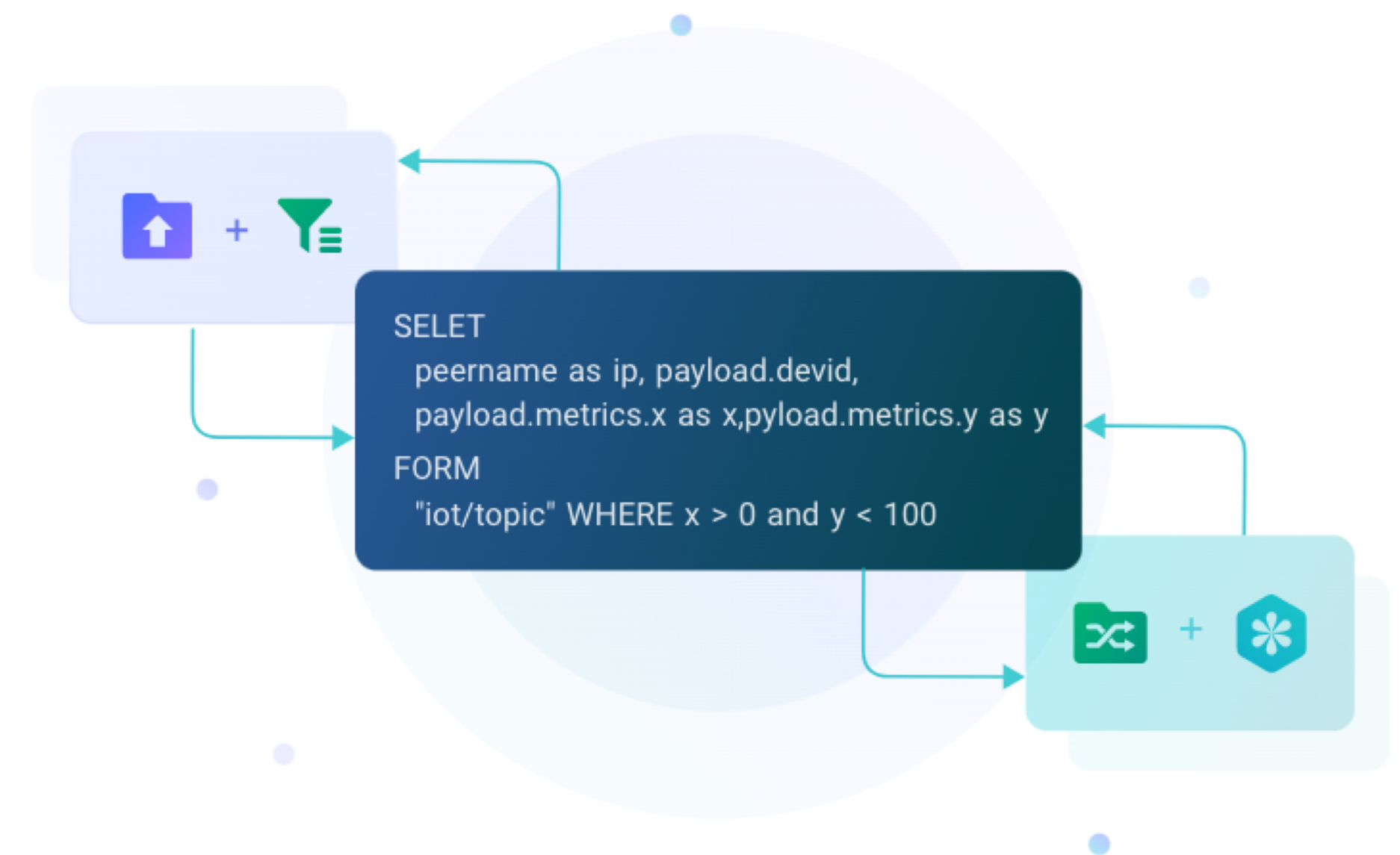
- Provide users with dedicated EMQX cluster deployment to ensure service performance and security;
- Provide millions level concurrent connection services for large-scale IoT platform;
- Support million level MQTT topics, which is convenient for users to flexibly design applications;
- EMQX Cloud Professional Edition provides a VPC peer connection capability to interconnect between the EMQX and the customer application system on cloud, and achieve system integration with high throughput and low latency;



High-performance Rule Engine

Built-in Rule Engine

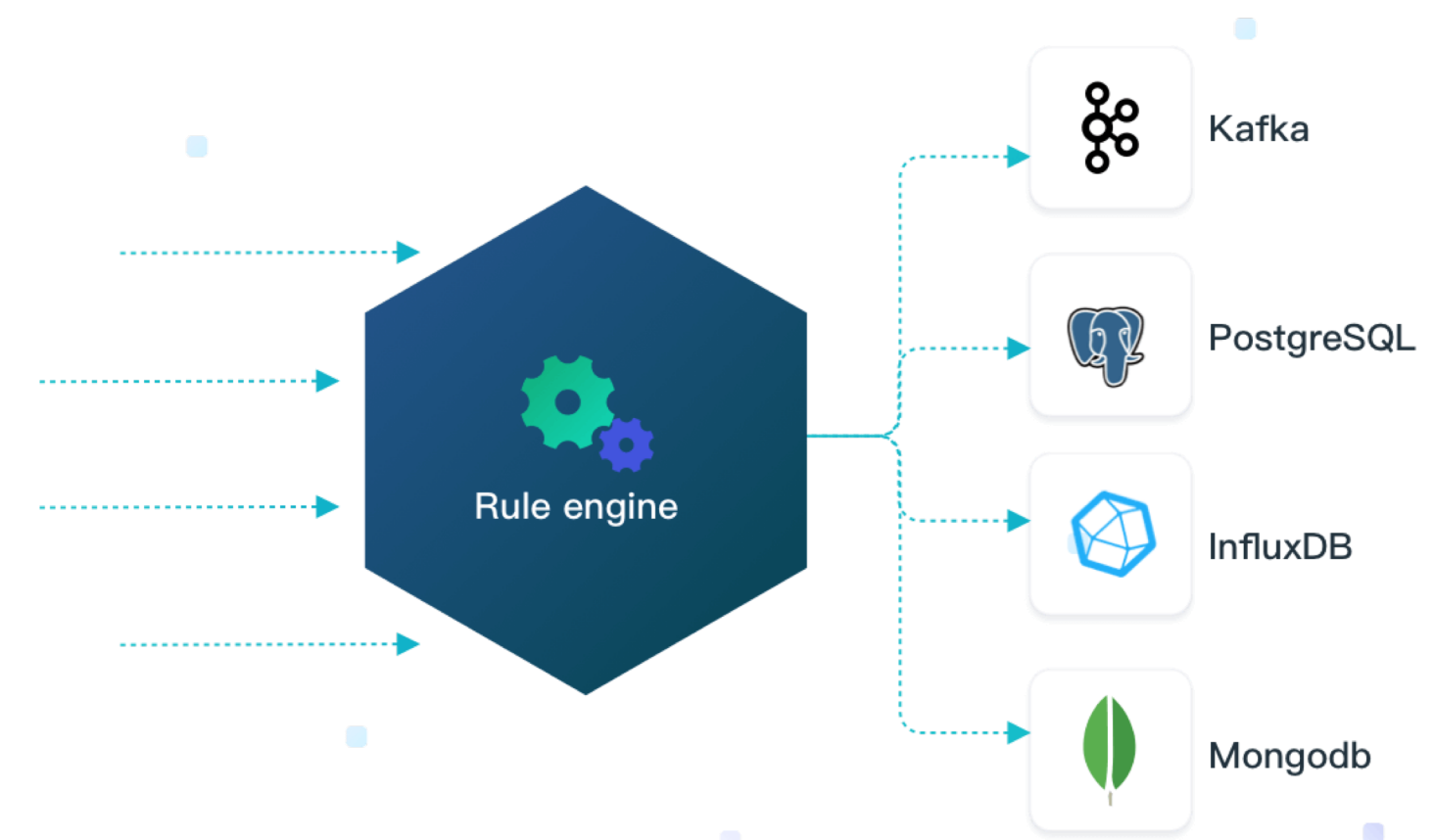
- Provides built-in rule engine capability, **no additional charges are required**;
- High-performance real-time rule engine, **millisecond-level** message processing and data routing;
- SQL statement-based low-code rule definition, and rules **take effect immediately** ;
- Provide flexible data filtering, payload splitting, format conversion, and message forwarding capabilities to reduce development pressure;



Out-of-box IoT Data Integration

Easily connect to various data storage and data processing services

- Support various databases integration, including MySQL, InfluxDB, TimescaleDB, Redis, etc.;
- Support data bridging to Kafka to achieve high-throughput data access and consumption architecture;
- Support database and MQ SaaS of various cloud vendors.



Flexible project and account management

Project Management and RBAC

- Provide project management capabilities, and provide project-based multiple EMQX instance management and monitoring;
- Provides role-based access control for enterprise users through sub-user management;

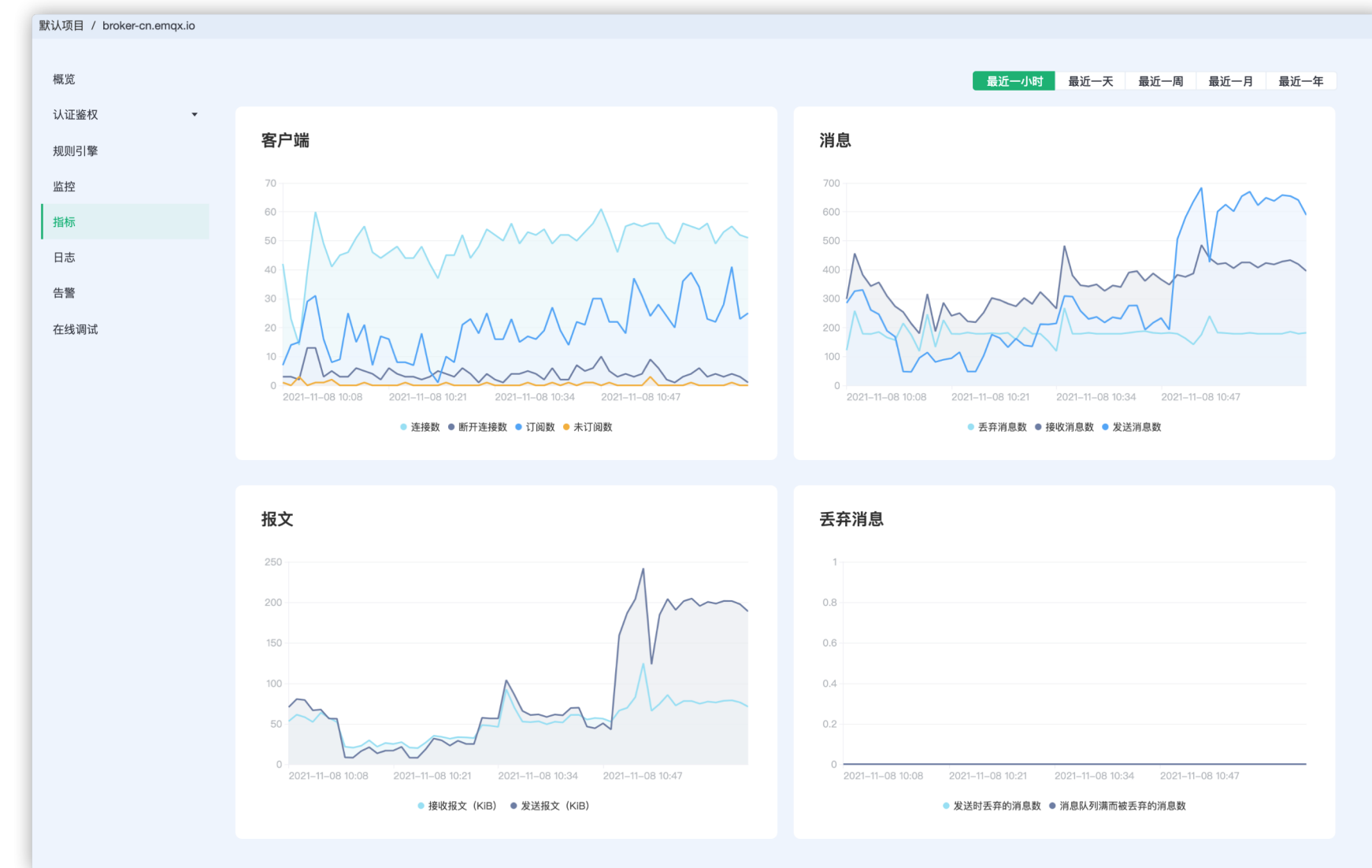
The screenshot displays two main sections of the EMQX management console. The top section, titled '项目中心' (Project Center), shows a dashboard with a '+ 新建项目' (New Project) button and three project cards: '默认项目' (Default Project), '华东-上海项目' (East China - Shanghai Project), and '华南-深圳项目' (South China - Shenzhen Project). Each card displays deployment counts for '基础版' (Basic Edition), '专业版' (Professional Edition), and '旗舰版' (Flagship Edition), along with status counts for '部署' (Deployed), '运行中' (Running), and '停止运行' (Stopped). The bottom section, titled '用户管理' (User Management), features a search bar for sub-user login addresses and a '+ 新建用户' (New User) button. Below is a table listing users with columns for '账号' (Account), '备注' (Remarks), '角色' (Role), and '状态' (Status).

账号	备注	角色	状态
tool1991@163.com		项目管理员	• 未认证
subuser@emqx.io	杭州集群管理员	项目管理员	• 未认证
test-cn@emqx.io	xxx	项目使用者	• 启用
subuser2@emqx.io	请不要修改该用户的任何数据	项目管理员	• 停用中
subuser1@emqx.io	请不要修改该用户的任何数据	财务专员, 项目使用者	• 启用
seanlee2008@163.com		项目管理员, 项目使用者	• 启用

Operation and monitoring capabilities

Various operation and maintenance monitoring and alarm services

- Real-time monitoring of cluster status, such as message, client, message, topic, etc.;
- Online logs query by Timestamp, Log Level and InstanceID (support ClientID, Client IP, Username, Topic, ResourceID, RuleID query in next release);
- Customized system alarm, support email notification and PageDuty message push;



Comparison of different Editions (1)

Category	Capability	Standard	Professional
Protocol	MQTT Protocol	✓	✓
	Customized Protocol		✓
Basic Functions	QoS (0 , 1 , 2)	✓	✓
	Retained and Last Will Msg	✓	✓
	Shared Subscription	✓	✓
	Restful API	✓	✓
Security	User/Password Auth	✓	✓
	ACL	✓	✓
	External Database/HTTP Auth		✓
	SSL /TLS		✓

Comparison of different Editions (2)

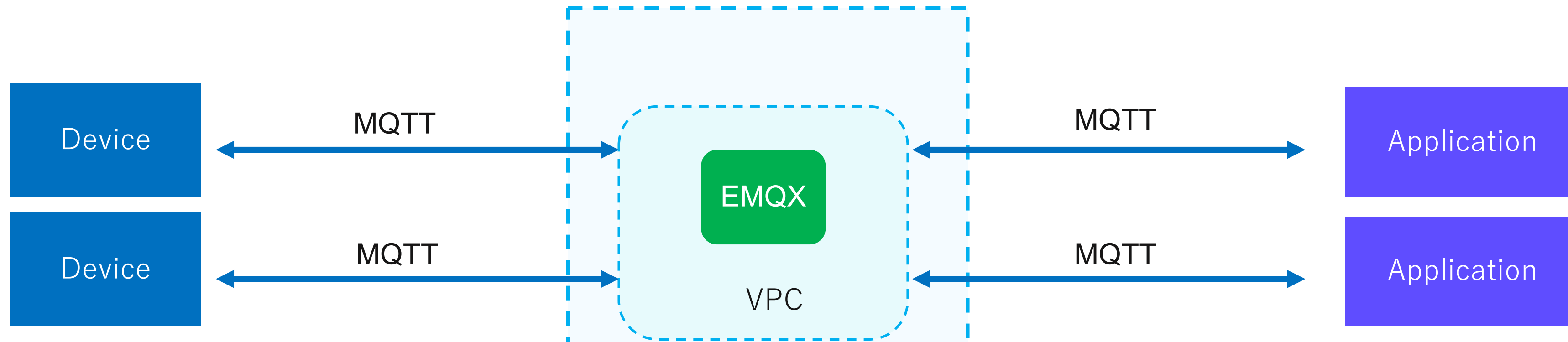
Category	Capability	Standard	Professional
Rule Engine & Data Integration	SQL-Based Rule	✓	✓
	Message republishing	✓	✓
	MQTT bridge	✓	✓
	Webhook	✓	✓
	Database Integration		✓
	MQ Data Bridge(Kafka, Pulsar etc.)		✓
Network	Max. Concurrent Conn.	10,000	100,000 (Contact sales for larger scales)
	VPC Peer connection		✓
	Private Link (AWS)		✓

Comparison of different Editions (3)

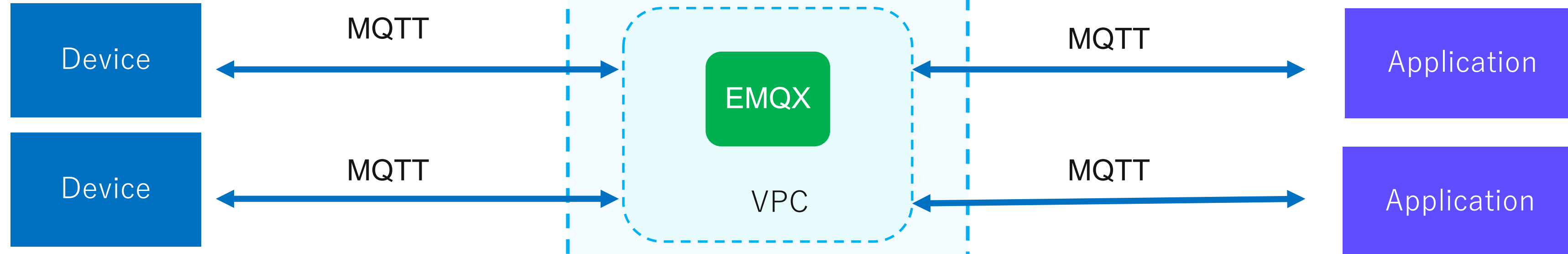
Category	Capability	Standard	Professional
Cloud Provider	AWS	✓	✓
	Azure		✓
	Google Cloud		✓
VAS	NAT Gateway		✓
	Internal LB		✓
Service & support	SLA	99.5%	99.99%
	Online support	Working time	24/7

Typical architecture – Standard Edition

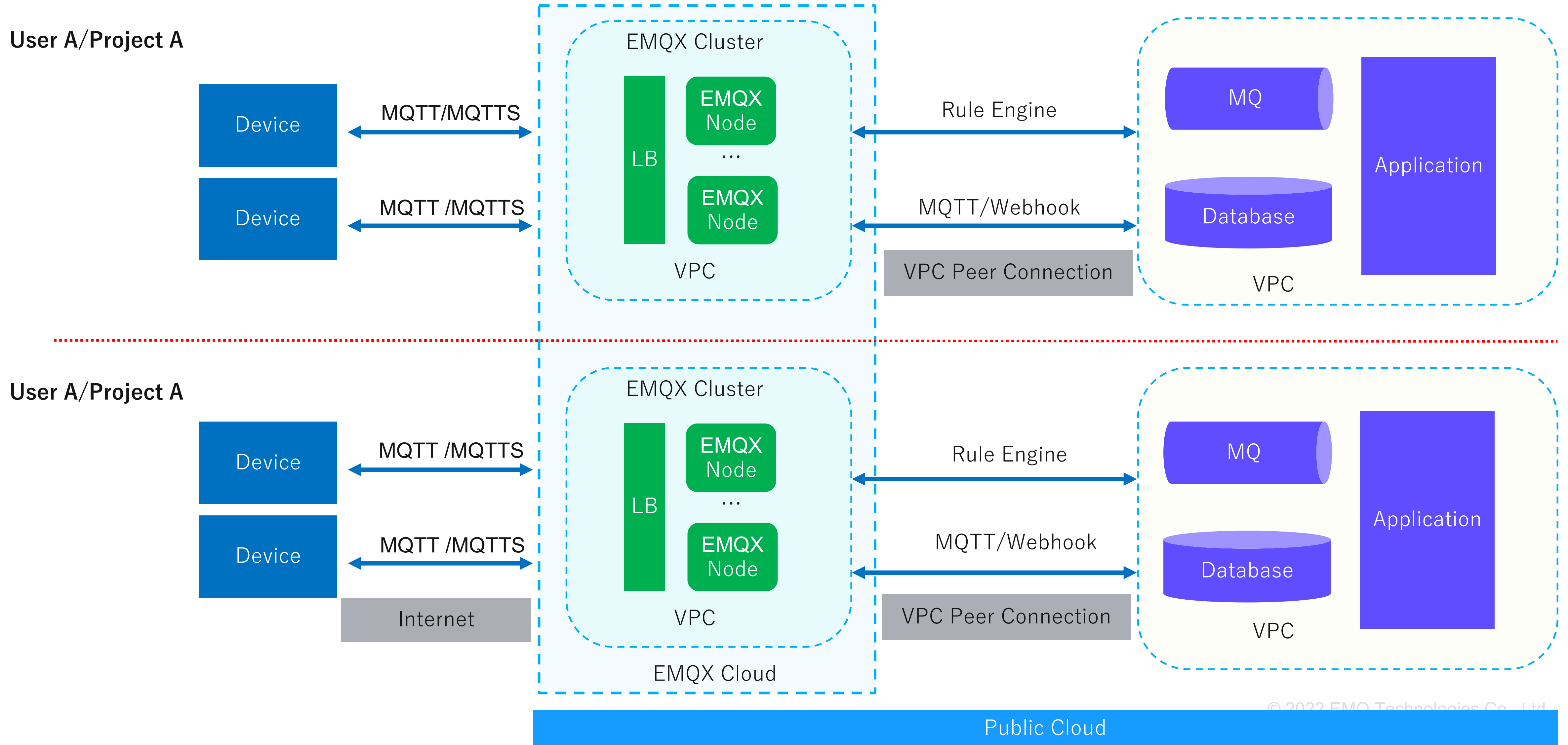
User A/Project A



User B/Project B



Typical architecture – Professional Edition



AWS Private Link

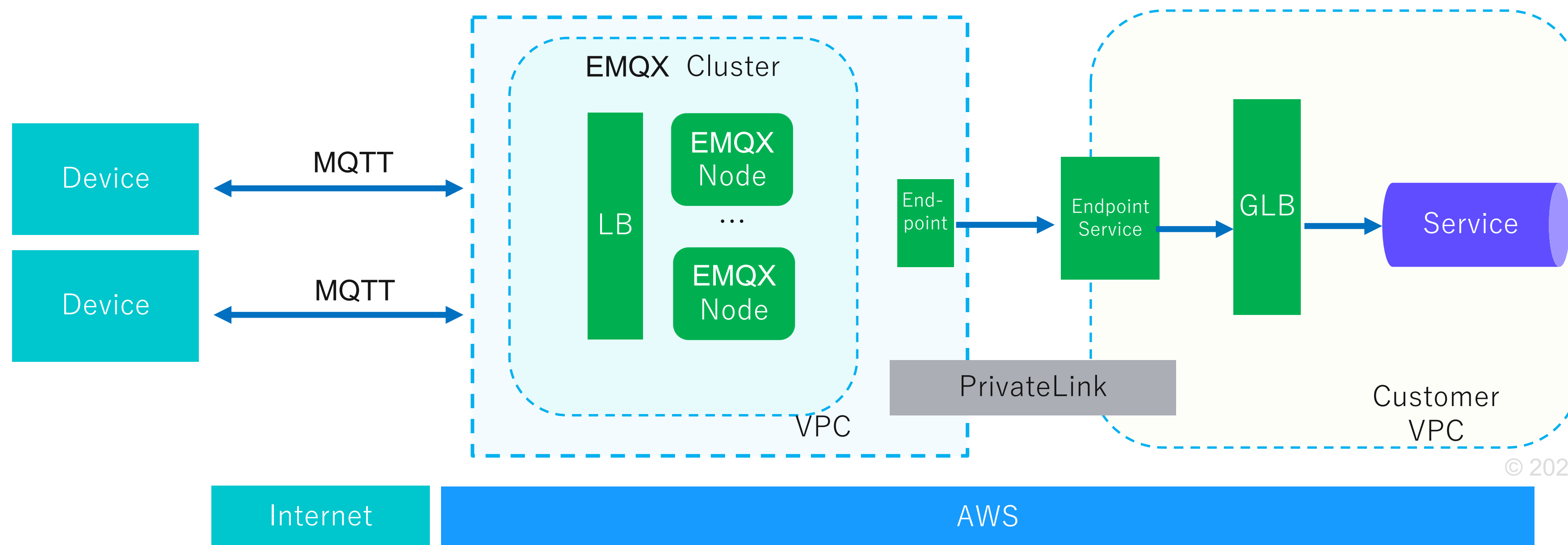
Private Link :

- Private link **establish a secure and stable private connection to services between EMQX and Users VPC ;**
- Only Support on AWS ;

Private Link VS. VPC Peer Connection:

- Security : Private Link Only expose specified services, which is more secure than VPC peer connection ;
- Cost : EMQX Users need to pay additional traffic fees to AWS; VPC peering connections is free to EMQX user ;

Data Processed per month in an AWS Region	Pricing per GB of Data Processed (\$)
First 1 PB	\$0.01
Next 4 PB	\$0.006
Anything over 5 PB	\$0.004

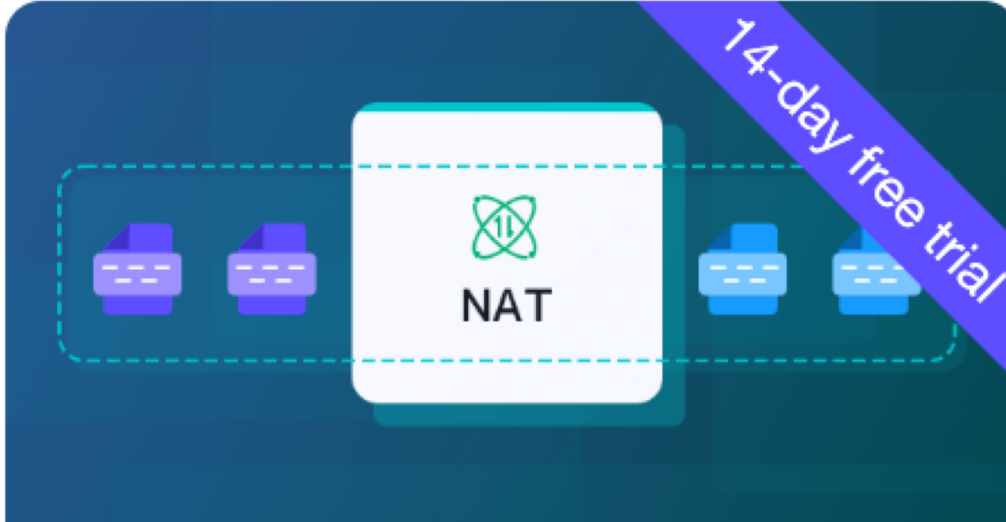


EMQX Cloud Serverless

- Pay as you go
- Free quota every month
- Deploy in seconds
- Auto scaling

EMQX Cloud Value Add Services

VAS – NAT Gateway



14-day free trial

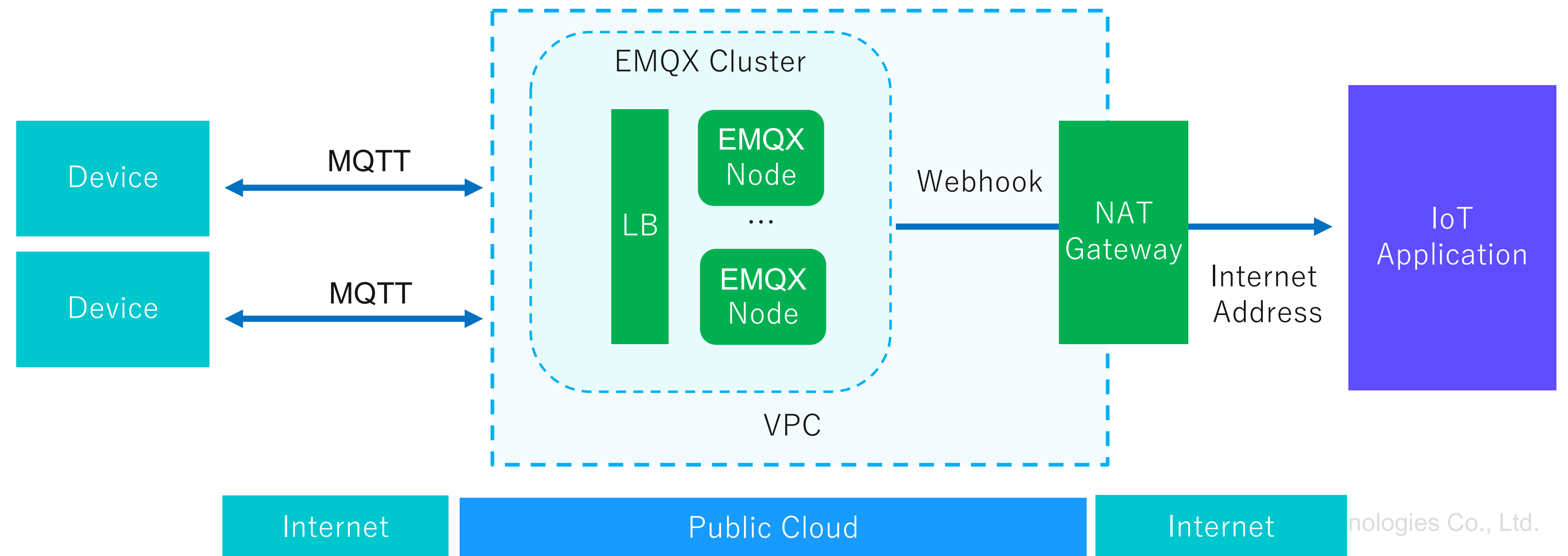
NAT Gateway

Provides the deployment of the public network acces...

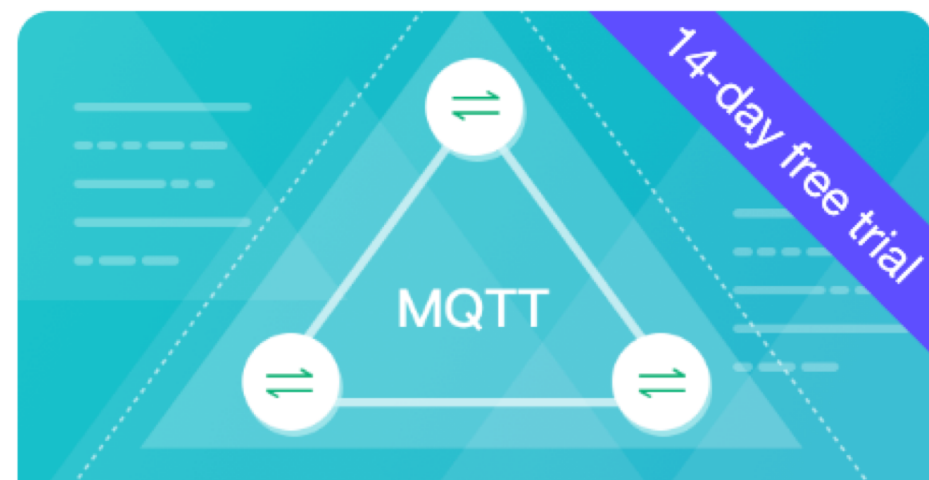
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[Introduction](#)

- Function : Provides network address transformation services and provides the ability to access public network resources for EMQX cluster ;
- Pre-condition : **EMQX Cloud Professional Edition**
- Use Case : Call the Application API exposed on the Internet through EMQX webhook to push message and trigger events.



VAS – Internal Load Balancers



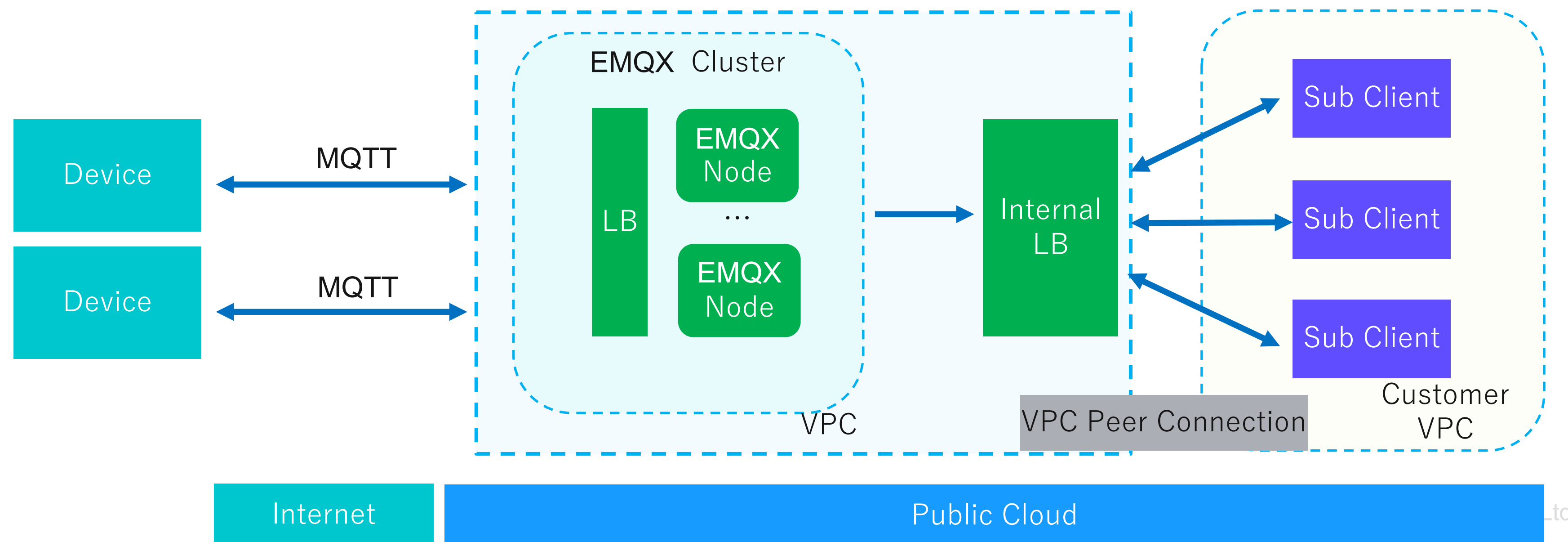
Internal Load Balancers

Provides the deployment Intranet access capability

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Introduction

- Function : distribute traffic on demand in the intranet, extending the throughput capacity of applications by distributing traffic to different back-end servers.
- Pre-Condition : EMQX Cloud Professional Edition , Create VPC peer connection ;
- Use case : shared subscription ;



EMQX Cloud value proposition

Who need EMQX Cloud

Cloud Native Architecture Customer

- Major system is deployed on the public cloud, and the device data can be uploaded to the public cloud;
- Applications and backend services are ready on the public cloud or plan to be deployed on the public cloud;

Need a standard MQTT service and cross-cloud capability

- Requires standard MQTT message broker service, not the all-in-one IoT Platform;
- The infrastructure software is not bounded with cloud vendor PaaS;
- Device access and authentication methods are based on the standard MQTT protocol, using standard SDKs and not relying on cloud vendor SDKs ;
- Cross-cloud service provider deployment;

Who need EMQX Cloud



Strong requirement for operation and maintenance services

- Customer hope to focus on application layer implementation;
- With the number of device connections grows, the production environment become unstable due to configuration and operation problems; (especially to the EMQX broker user)



Cost and pricing model

- EMQX Cloud will save the cost in the scenario that concurrent connection of user platform is not large, but the number of messages is relatively large.
- Provides a free high-performance rule engine;
- No MQTT topic limit
- QoS2 Support

Why EMQX Cloud



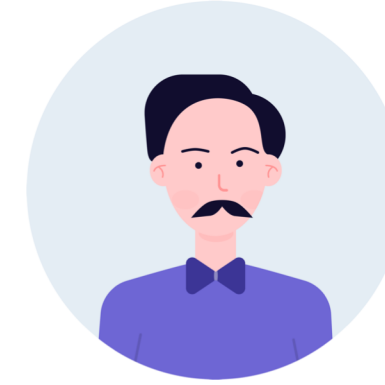
Development Engineer

- Provides out-of-box standard MQTT broker and rule engine SaaS, which shortening the Deployment/Configuration learning curve;
- It can quickly deploy R&D, testing, UAT, and production environments;
- Online Logs provides easier way to track issues;



Operation Engineer

- EMQX Cloud commits the high availability and 99.99% uptime, which improves the overall operation and maintenance level ;
- Provides 24*7 support services;



CIO、CTO

- Provide dedicated cluster deployment for enterprises with higher security and stability (comparing with the other SaaS competitors);
- The architecture are not bounded with cloud vendors ; It support across cloud vendors deployment and switch vendor easier.



Project manager and Business Leader

- RBAC helps to manage multiple projects.
- The Cloud service Expenses records can be listed by project, which helps managers to understand the cost of each project and facilitates budget planning

Resources

Title	Category	Link
Integrate EMQX MQTT Cloud with Home Assistant	Product tutorial	https://www.emqx.com/en/blog/integrate-emqx-mqtt-cloud-with-home-assistant
Set up EMQX Cloud MQTT Broker with openHAB	Product tutorial	https://www.emqx.com/en/blog/set-up-emqx-cloud-mqtt-broker-with-openhab
Quick Start of EMQX MQTT Cloud Service	Product tutorial	https://www.emqx.com/en/blog/quick-start-of-emqx-mqtt-cloud-service
Read it, get it! The difference between EMQX Enterprise and EMQX Cloud	Product tutorial	https://www.emqx.com/en/blog/difference-between-emqx-enterprise-and-emqx-cloud
How to use EMQX Cloud to access CoAP devices	Product tutorial	https://www.emqx.com/en/blog/connecting-coap-devices-to-emqx-cloud
Introducing EMQX Cloud on Microsoft Azure	Product update	https://www.emqx.com/en/blog/introducing-emqx-cloud-on-microsoft-azure
EMQX Cloud now officially supports deployment on Google Cloud Platform	Product update	https://www.emqx.com/en/blog/introducing-emqx-cloud-on-google-cloud-platform
The new version of EMQX Cloud realizes multi-project deployment management	Product update	https://www.emqx.com/en/blog/emqx-cloud-realizes-multi-project-deployment-management
EMQX Cloud launches sub-account management, powering efficient enterprise management	Product update	https://www.emqx.com/en/blog/emqx-cloud-launches-sub-account-management
EMQX Cloud update: ensure data security with flexible HTTP custom authentication	Product update	https://www.emqx.com/en/blog/emqx-cloud-http-custom-authentication
More alerts integration modes, less pressure on operation and maintenance EMQX Cloud update	Product update	https://www.emqx.com/en/blog/emqx-cloud-alarm-integration
EMQX Cloud launched value-added services to meet customized needs	Product update	https://www.emqx.com/en/blog/emqx-cloud-launched-value-added-services
EMQX Cloud update: Easily realize data processing and unloading in three steps	Product update	https://www.emqx.com/en/blog/emqx-cloud-easier-to-use-rules-engine
EMQX Cloud update: Support MySQL and PostgreSQL External Auth&ACL	Product update	https://www.emqx.com/en/blog/emqx-cloud-update-external-authentication-authorization
More Secure and Reliable Connection to EMQX Cloud via AWS Private Link	Product update	https://www.emqx.com/en/blog/emqx-cloud-update-aws-private-link
EMQX Cloud is now available in Hong Kong & Taiwan Regions	Product update	https://www.emqx.com/en/blog/emqx-cloud-is-now-available-in-hong-kong-and-taiwan-regions

Title	Category	Link
Setting up one-way TLS/SSL certificate with EMQX Cloud	Authentication	https://www.youtube.com/watch?v=kkb1D4IXbFo
Setting up two-way TLS/SSL certificate with EMQX Cloud	Authentication	https://www.youtube.com/watch?v=VzygGJXgVI4
How to Create a Self-Signed TSL/SSL Certificate	Authentication	https://www.youtube.com/watch?v=kYL0pQ0GC3k&t=28s
Creating VPC Peering with EMQX Cloud	Connection	https://www.youtube.com/watch?v=ajnLBS3LLKY&t=168s
How to set up a private network connection to EMQX Cloud via AWS PrivateLink	Connection	https://www.youtube.com/watch?v=vu_3KW4pq9A&t=14s
Saving data to InfluxDB by using the EMQX Cloud Rule Engine	Data Integration	https://www.youtube.com/watch?v=1S09epPWLpc&t=1s
Bridge device data to Kafka using the EMQX Cloud Rule Engine	Data Integration	https://www.youtube.com/watch?v=Bk-uhfSm32I
Save device data to Timescale Cloud using the EMQX Cloud Rule Engine	Data Integration	https://www.youtube.com/watch?v=7EheLmjaHCk&t=58s
Bridging Data to Webhook Using the EMQX Cloud Rule Engine	Data Integration	https://www.youtube.com/watch?v=fXahRUaQaHE
Bridge data to Confluent Cloud by using the EMQX Cloud Rule Engine	Data Integration	https://www.youtube.com/watch?v=jLn0q8xf-1Y&t=123s
EMQX Cloud Quick Start Tutorial	Product tutorial	https://www.youtube.com/watch?v=UX2KAM7FVLs&t=1s
Using shared subscription with EMQX Cloud	Shared Subscription	https://www.youtube.com/watch?v=5KPRsZyGpNI

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