

# **NEC BIOMETRIC MATCHING SYSTEM CLOUD (NEC BMS CLOUD)**

Biometric Matching at Cloud Scale for National Identity Systems



# NEC Biometric Matching System Cloud



## What is BMS Cloud?

**BMS Cloud** is a cloud native **biometrics matching engine** which incorporates **NEC's** face, fingerprint, and iris technologies for large-scale **civilian use cases**.



Face



Fingerprint



Iris

- ✓ Perform National Scale Biometrics **1:1 Verification** and **1:N Identification**
- ✓ Deploy **BMS Cloud on IT infrastructure that you control** (Private DC, Public Cloud, Hybrid Cloud)
- ✓ **Built your own cloud native applications** and have full control of your biometrics data for **data sovereignty** and **compliance to GPDR / PDPA**

NEC BMS Cloud is a cloud-native biometric matching platform designed for governments and enterprises needing high-speed and highly scalable identity verification. Built on open-source infrastructure, it enables large-scale 1:1 verification and 1:N identification across fingerprint, face, and iris—without the need for proprietary hardware.

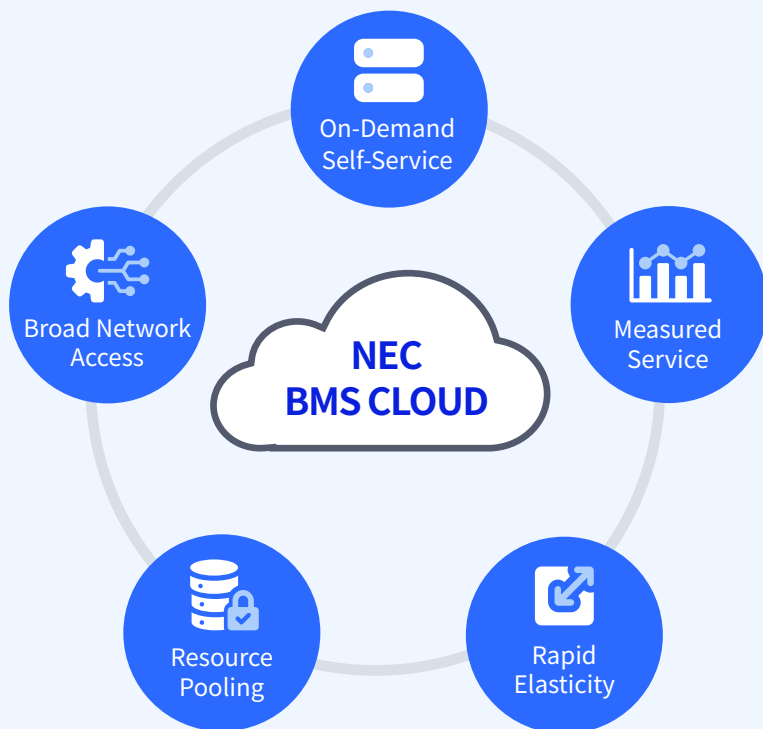


Designed to support data sovereignty and compliance requirements, BMS Cloud gives full control over biometric data while ensuring system flexibility, reliability, and performance on private, public, or hybrid cloud environments.

# Key Features

## 1. Cloud-Native Architecture for Maximum Agility

NEC BMS Cloud is purpose-built with a **containerized microservices design**, making deployment more agile and adaptable.



- Supports deployment on **private, public, or hybrid cloud infrastructure**.
- Built to comply with **data sovereignty laws** and evolving regulations.
- Enables **faster rollout of new features** through continuous integration and delivery.
- Facilitates **multi-region deployments** with seamless container management.

## 2. Scalable and Cost-Efficient by Design

With automatic resource allocation, BMS Cloud grows and shrinks based on real-time demand.

### BMS Cloud Design Principles



Containerization



Microservices



Stateless vs  
Stateful



Automation

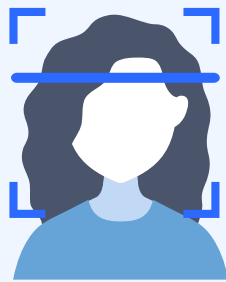


Orchestration

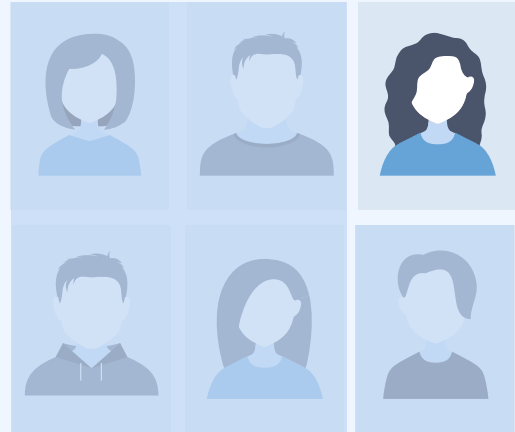
- 1 **Auto-elastic scaling** dynamically adjusts compute resources to match traffic.
- 2 Built-in **Kubernetes orchestration** for workload optimization and container management.
- 3 Lowers cost by only using the computing power required per workload.
- 4 Efficiently supports both **short-term bursts** and **long-term growth**.

### 3.National-Level Biometric Matching at Speed

Built to handle **massive biometric workloads** at national scale.



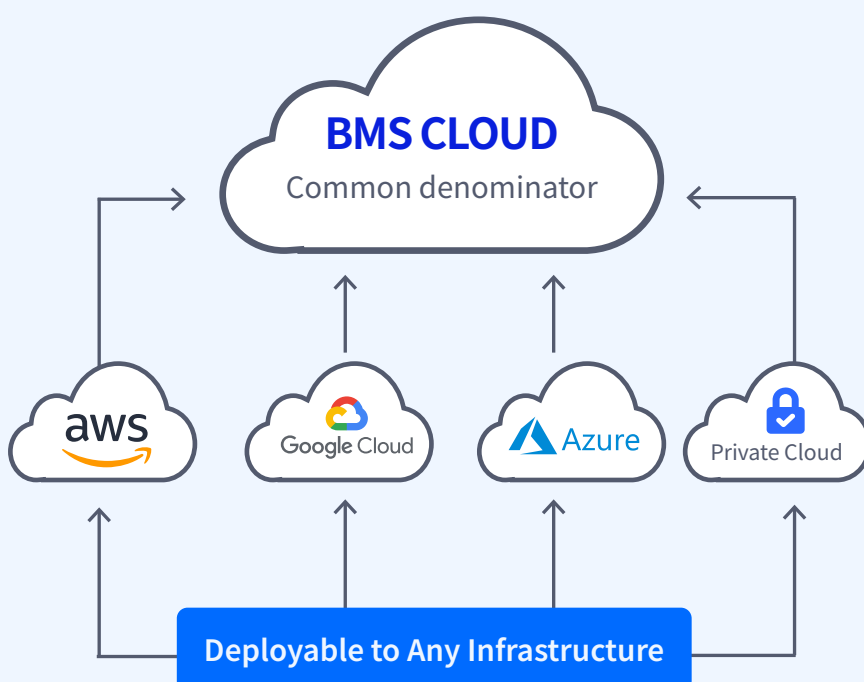
Match found



- Supports both **1:1 verification and 1:N** identification across multi-modal biometrics.
- Processes **billions of biometric records** with real-time results.
- Designed for **high-throughput environments** with peak loads in national ID and border systems.
- Flexible enough to support diverse applications like **e-passport, social security, and secure banking**.

### 4. Cloud Agnostic Technology Stack

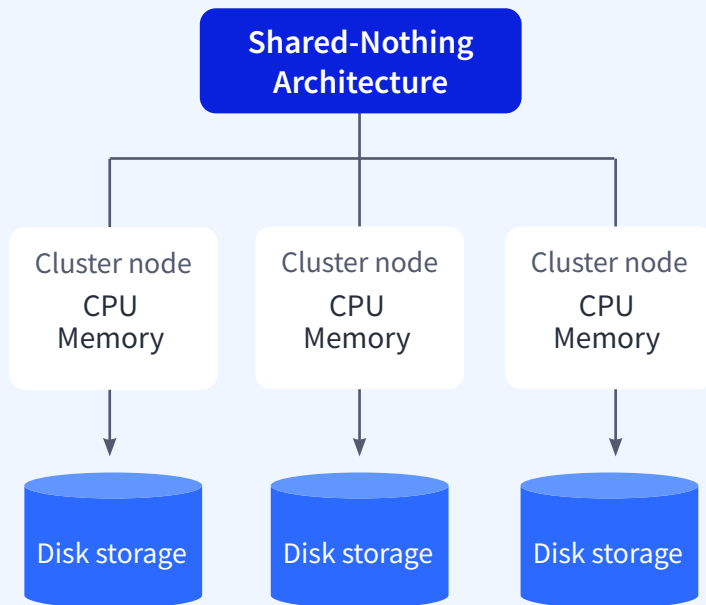
NEC BMS Cloud relies on standard and open-source cloud technology stack, giving customers more freedom and flexibility.



- 1 Prevents lock-in to a specific cloud infrastructure provider
- 2 Reduces long-term costs and increases vendor independence
- 3 Easily deployable on platforms like AWS, Azure etc, or private data centre

## 5. Always-On with Distributed Memory & Compute

Built for reliability, NEC BMS Cloud uses **distributed architecture** to ensure resilience and high availability.



- 1 **No downtime** even during system scaling or maintenance.
- 2 Built-in **self-healing** and **load-balancing** features maintain service quality.
- 3 **Distributed memory and compute**
  - maintain continuity if nodes are added or removed
  - together with Shared-Nothing Architecture, enables massive scalability, rapid elasticity and high availability

## 6. Proven Accuracy with Global Recognition

NEC's biometric matching engines are consistently ranked at the top of global performance benchmarks.



Ranked No.1 in facial, iris, and fingerprint biometrics — achieved the world's top evaluation in benchmark tests conducted by NIST.



Face  
recognition



Iris  
recognition



Fingerprint  
recognition

✓ **#1 in NIST accuracy evaluations** for face, iris, and fingerprint.

✓ Trusted by national governments, law enforcement, and civil agencies.

✓ Backed by over **50 years of R&D** in biometric technologies.



# Trust to Scale

Proven performance for evolving needs.



Country-level **implementation** managing hundreds of millions of biometric records.



Proven elasticity from **1,000 to 10,000,000,000s matches per second (MPS)**.



Supports **mission-critical services** in public safety, e-government, and financial sectors.

## Social Value

NEC BMS Cloud enables secure, scalable, and inclusive digital ecosystems.



Promotes **fair and accessible identity verification** across all citizen groups.



Strengthens **digital government infrastructure** through reliable and efficient authentication.



Protects public trust with **transparent, sovereign data** control and secure operations.



Arrange a demo with us today. Contact us at [sg\\_marketing@nec.com.sg](mailto:sg_marketing@nec.com.sg)

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\ Orchestrating a brighter world