

# **“Keeping Data Silos Truly Isolated and Secure”**

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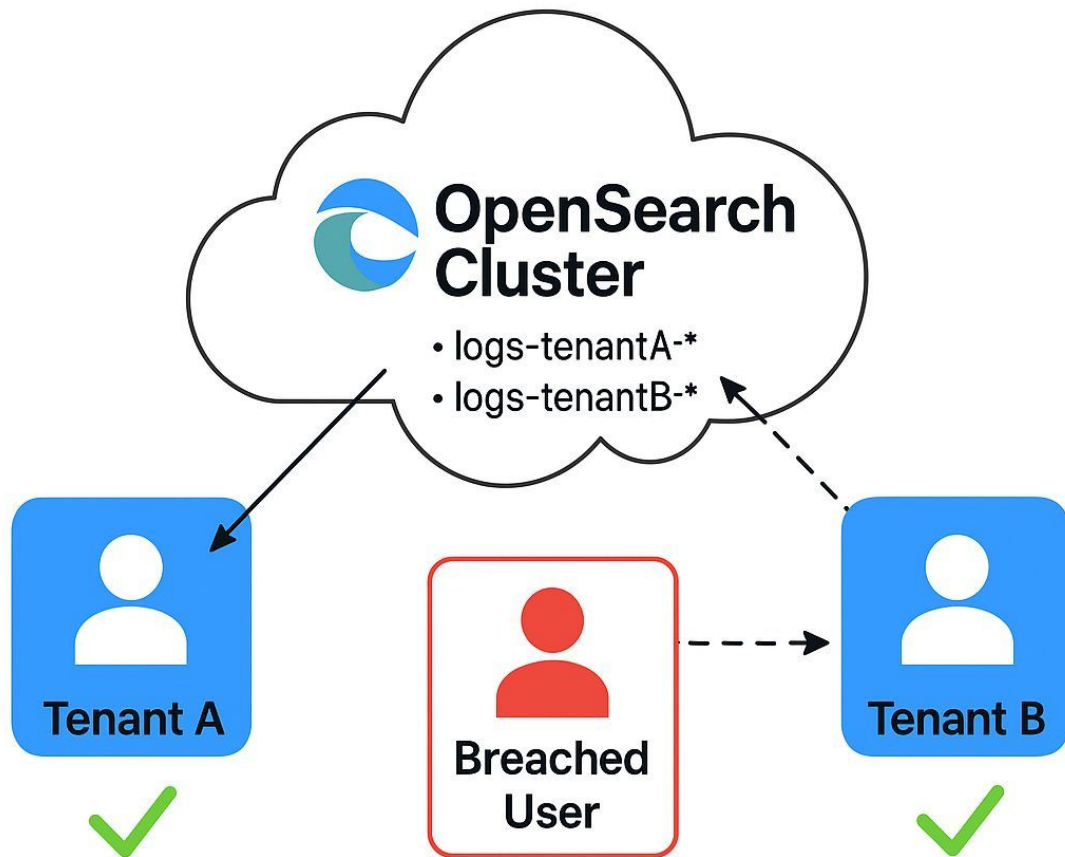


**Why modularity is needed ?**

# Scenario

A SaaS analytics platform stores multiple customers' data in a shared OpenSearch cluster using broad index patterns (e.g. logs-\*)

# Why Data Isolation Matters



# Challenge

1. **Loose Data Isolation:** Tenants share the same index pattern with insufficient scoping.
2. **Overly Broad Role Permissions:** Wildcard access (logs-\*) ignores tenant-specific boundaries.
3. **Lack of Defense in Depth:** No document- or field-level restrictions.
4. **Hard to Audit & Monitor:** Misconfigurations go unnoticed until damage occurs.

# Key Principle

**High cohesion(closely related) and low coupling(dependent) data is the ideal design principle**

# Solution

- **RBAC** : enforce strict boundaries
- **Least privilege access**
- **Deny by default**
- **Add isolation layers :**
  - **Auth** : who am i
  - **Author** : what can i do
  - **Document level security** : hide based on user context
  - **Field level security** : hide data inside the document