

Monolith vs Microservices

◆ Monolith কী?

👉 পুরো application একটা single codebase + single deployable unit।

- UI
- Business logic
- Database access

সব একসাথে থাকে।

📦 Example

একটা single backend:

/login

/order

/payment

/notification

সব এক app-এর ভিতর।

◆ Microservices কী?

👉 Application অনেকগুলো small, independent services এ ভাগ করা।

- Auth Service
- Order Service
- Payment Service
- Notification Service

প্রতিটা:

- আলাদা codebase
- আলাদা deploy
- আলাদা scale

Side-by-Side Comparison

| Topic | Monolith | Microservices |
|-----------------|-----------|---------------|
| Codebase | Single | Multiple |
| Deployment | One | Independent |
| Scaling | Whole app | Per service |
| Complexity | Low | High |
| Team size | Small | Large |
| Fault isolation | Poor | Good |

Monolith — Pros & Cons

Pros

- Simple architecture
- Fast development
- Easy debugging
- Low infra cost

Cons

- Scale করা কঠিন
- One bug → whole app down
- Large codebase painful

Microservices — Pros & Cons

Pros

- Independent scaling
- Fault isolation
- Team autonomy
- Tech flexibility

Cons

- Complex
- Network latency
- Debugging hard
- Higher cost

When to Choose What? (VERY IMPORTANT)

Choose Monolith when:

- Early startup
- < 10 engineers
- Low traffic
- Fast MVP দরকার

 Interview line:

“Monolith helps us move fast initially.”

 Choose Microservices when:

- Product grown
- High traffic
- Multiple teams
- Independent scaling দরকার

 Interview line:

“Microservices help us scale teams and traffic independently.”

 FAANG Golden Rule

“Start with monolith, migrate to microservices when scale demands it.”

FAANG কখনো আশা করে না যে তুমি day-1 microservices নেবে।

 Real-World FAANG Example

- Amazon → Microservices (huge scale)
- Early-stage startup → Monolith

 Interview Cheat Sentence

এই sentence মুখস্থ রাখো:

“Microservices offer scalability and fault isolation, but introduce operational complexity.”



One-line Summary

Monolith = simplicity

Microservices = scalability with complexity