Cloud-native .NET Application on Azure Pack

It is not only possible, it is required. Are you ready?

(Draft-WIP, Ranjan)

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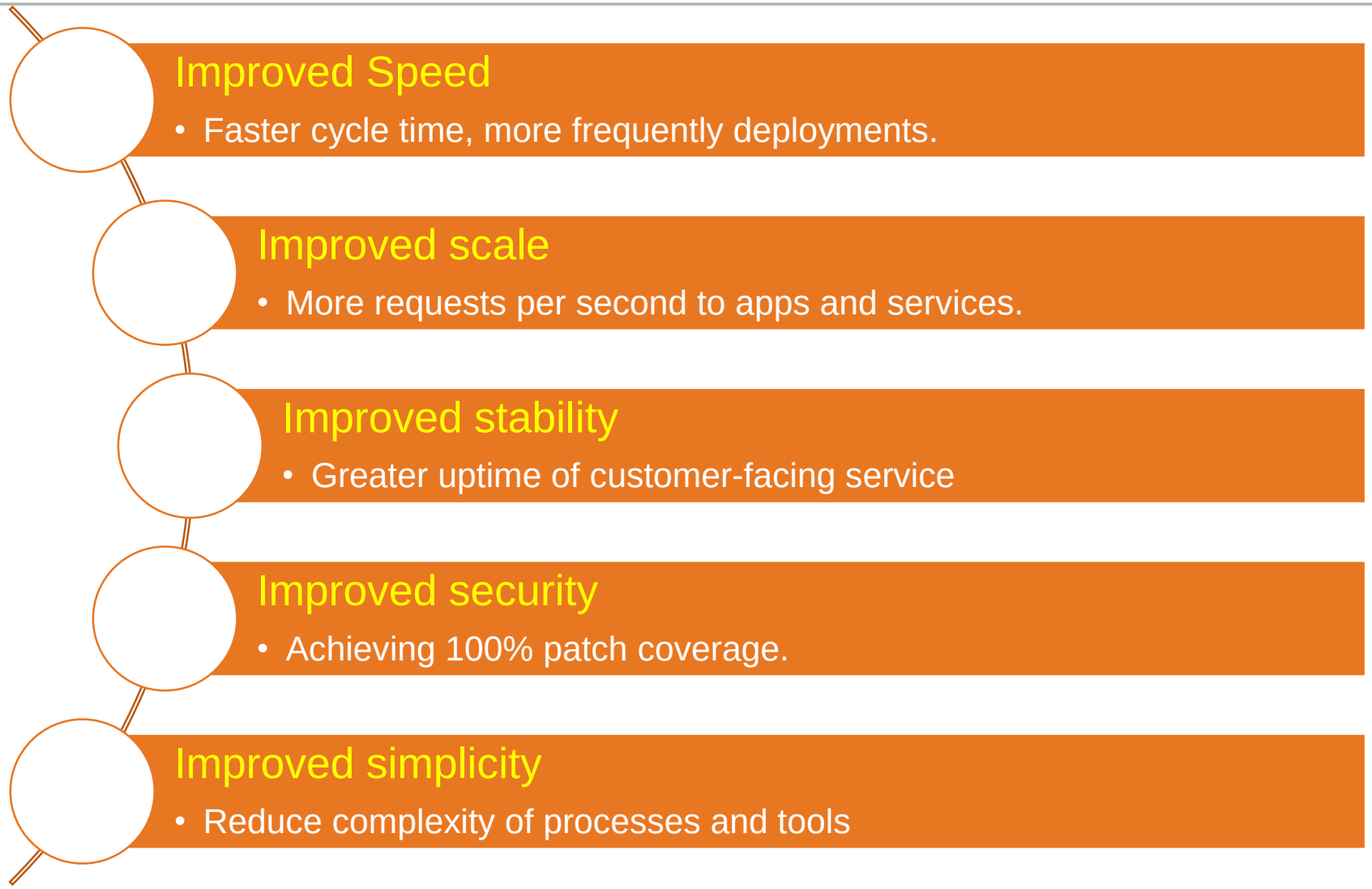
Agenda

Introduce you to practices, Azure pack and tools for building modern .NET applications.

Why do you need to be good at software

Customers expects it.	**Meet demand to operate at scale.**	**Gives you more business options.**	**Your competitors are doing it.**	**It makes everyone happier.**

Ok, but how do I know that I'm doing well at software?



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What are microservices?

It refers to an architectural style that supports constant change in your environment. This is accomplished by creating applications our of independent, loosely-coupled, domain-oriented services.

	Do you have a pressing reason to do it?
Moving to microservices? Here's what to consider.	Can you rearrange your teams?
	Are you ready to decompose your monoliths?
	How will you decompose?
	Are you currently doing CI/CD ?
	Is your production environment automated?
	How will you discover services at runtime?
	What can you do to prevent cascading failures?
	Are you ready to evolve your data platforms?
	Do you need to modernize your messaging and event stream processing toolchain?

What is cloud-native all about?

This is an approach to building and operating software that takes advantage of the cloud-computing model. Often seen as a combination of **microservices**, **continuous delivery**, **containers**, and **DevOps**.

It's all about software that's built for **scale**, built for **continuous change**, built to **tolerate failure**, built for **manageability**.

Most cloud-native applications comply with the 12 factor criteria.

- One codebase tracked in version control
- Explicitly declared dependencies
- Configuration stored in the environment
- Backing services treated as attached resources
- Services exported via port binding
- Separate build, release, and run stages
- Apps executed via port binding
- Scaled out via more processes
- Fast startup and graceful shutdown
- Parity among dev, staging, and production environments
- Logs treated as event stream
- Admin tasks run as one-off processes

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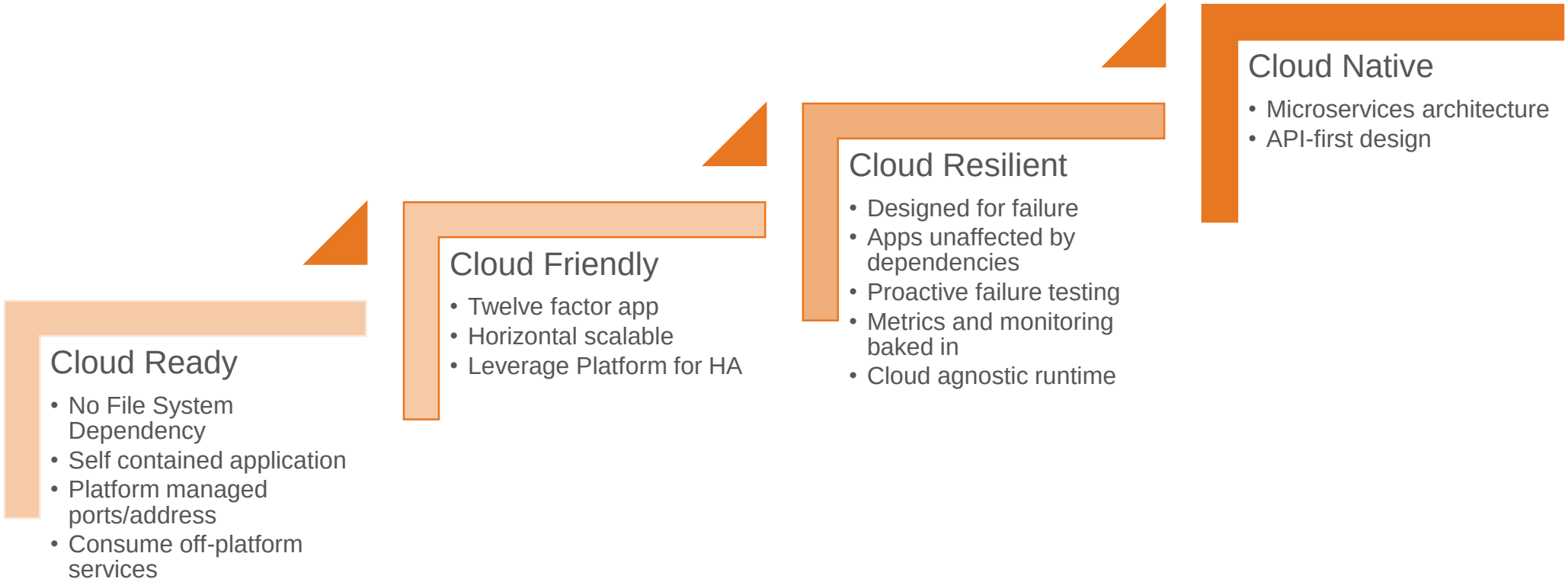
There is a **maturity model** to cloud native



So, What actually makes up a cloud-native platform?

Infrastructure

- Container Orchestration
- Service Discovery
- Configuration Management

Core IaaS

NAT	DNS
SDN	IPAM
Firewalls	WAN & VPN
Storage	Load Balancers
Compute	Network

Operations

- Service Monitoring and Dependency Management
- Inventory, Capacity, and Management
- Event Management and Routing
- Persistent Team Chat
- Metrics & Logging Analytics & Visualization
- Log Aggregation, Indexing & search
- Metrics Collection, Storage & Retrieval

Deployment

- Lifecycle Management
  Deploy | Patch | Upgrade | Retire
- Release Packaging, Management & Deployment
- CI Orchestration
- TDD Frameworks
- Artifact Repository
- Standard Build & Configurations
- Source Control Management

Runtime & Data

- HTTP/Reverse Proxy
- Application Runtime
- In-Memory Object Cache
- Search
- Messaging
- NoSQL Document Store
- NoSQL Key/Value Store

Security

- Control Plane Audit & Compliance
- Security Event & Incident Management
- Secrets Management
- Certificate Management
- Identity Management
- Threat & Vulnerability Scanning
- Network Security

Thank you