

AWS re:Invent

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Modernize .NET Framework applications with AWS tools

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Agenda

Presentation

- Application modernization
- Monolith to microservices
- AWS tools

Workshop

Application modernization

What is application modernization?

Defined –

Modernization is the process of progressively transforming applications to achieve the availability, scalability, business agility, and cost-optimization benefits of running in the cloud

Practical implications –

Leveraging updated software practices (such as microservices) and infrastructure (such as containers and Linux OS) to empower businesses to move faster and meet customer needs

.NET Framework migration strategies

Rehost

Deploy .NET Framework applications “as is” to Amazon Elastic Compute Cloud (Amazon EC2) virtual machines

Replatform

Containerize in Windows containers and orchestrate with Amazon Elastic Container Service (Amazon ECS), AWS Fargate, or Amazon Elastic Kubernetes Service (Amazon EKS)

Refactor

Port to .NET Core, and run in Amazon ECS, AWS Fargate, or Amazon EKS as Linux containers OR Lambda

Low

Level of effort

Containerization benefits

Agility



Develop and deploy faster to achieve business goals

DevOps



Build and operate using a proven ecosystem of cloud-focused tooling

Portability



Enable self-contained and scalable application deployments

Operational efficiency

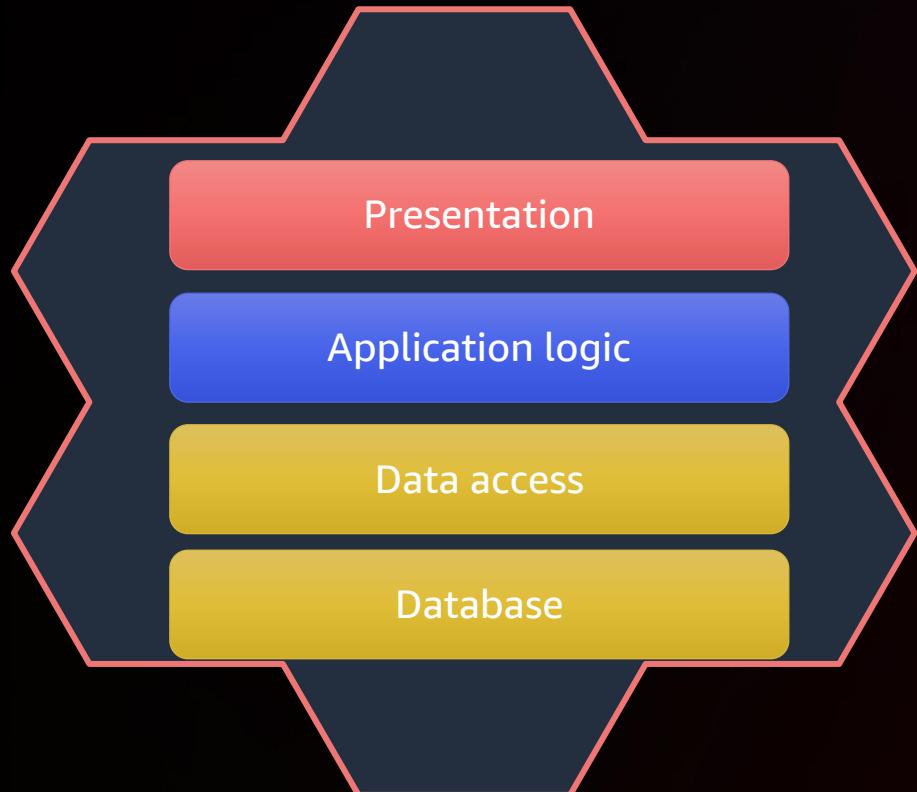


Reduce operational burden by removing undifferentiated heavy lifting and optimizing for cost savings in the cloud

Monolith to microservices

The monolith

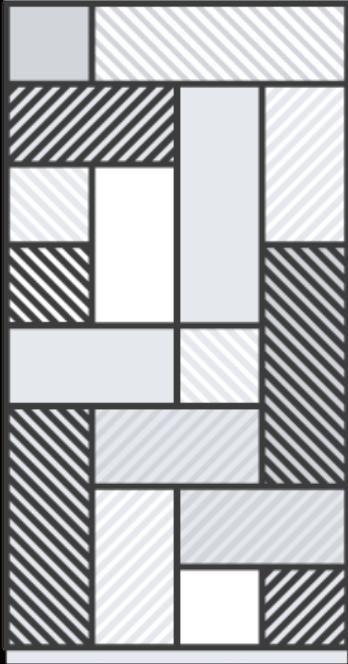
Large changes inherit large risk, thereby slowing releases and feedback



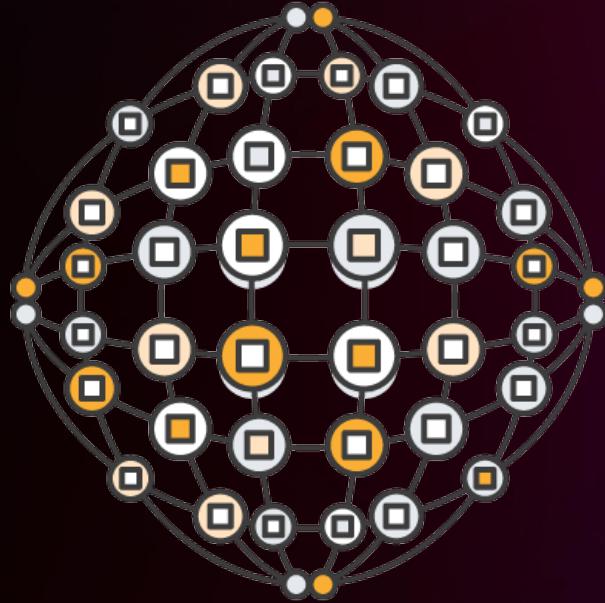
Monolithic application

Does everything
Shared release pipeline
Rigid scaling
High impact of change
Hard to adopt new technologies
Long deployment processes
Hard to iterate and extend

Development transformation



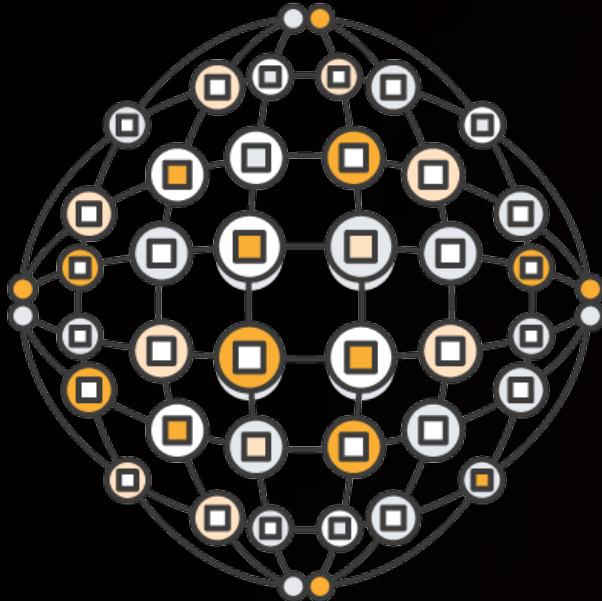
Monolithic architecture + hierarchical organization



Decoupled services + two-pizza teams



Microservices



Conway's Law – Organizations design systems that model the organization and communication structure

2002 Jeff Bezos memo –

1. All teams will henceforth expose their data and functionality through service interfaces
2. Teams must communicate with each other through these interfaces
3. There will be no other form of intra-process communication allowed – no direct linking, no direct reads, no shared-memory model
4. It doesn't matter what technology they use

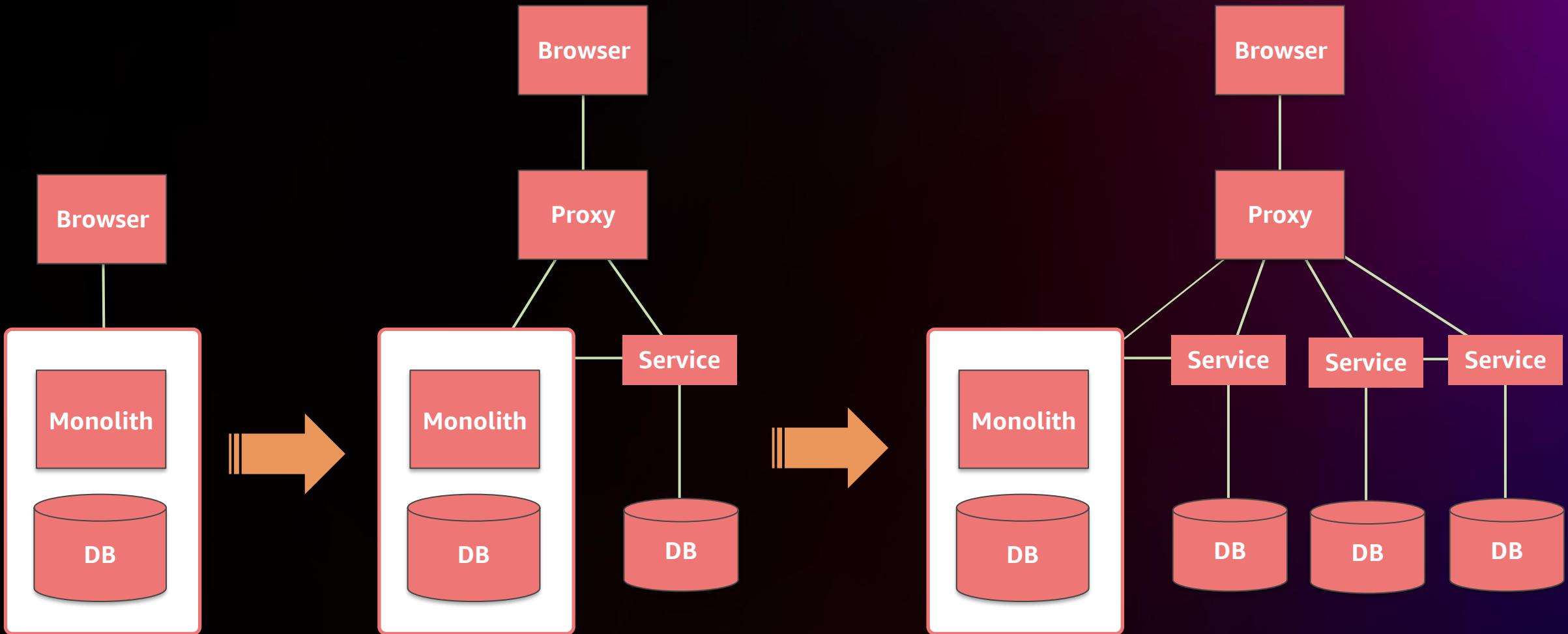
Martin Fowler's strangler fig pattern



“Gradually create a new system around the edges of the old, letting it grow slowly over several years until the old system is strangled.”

Martin Fowler
June 29, 2004

Creating a new system around the edges



AWS tools



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AWS Porting Assistant for .NET

AWS Porting Assistant for .NET is an analysis tool that scans .NET Framework applications and generates a .NET Core compatibility assessment, helping you port your applications to Linux faster

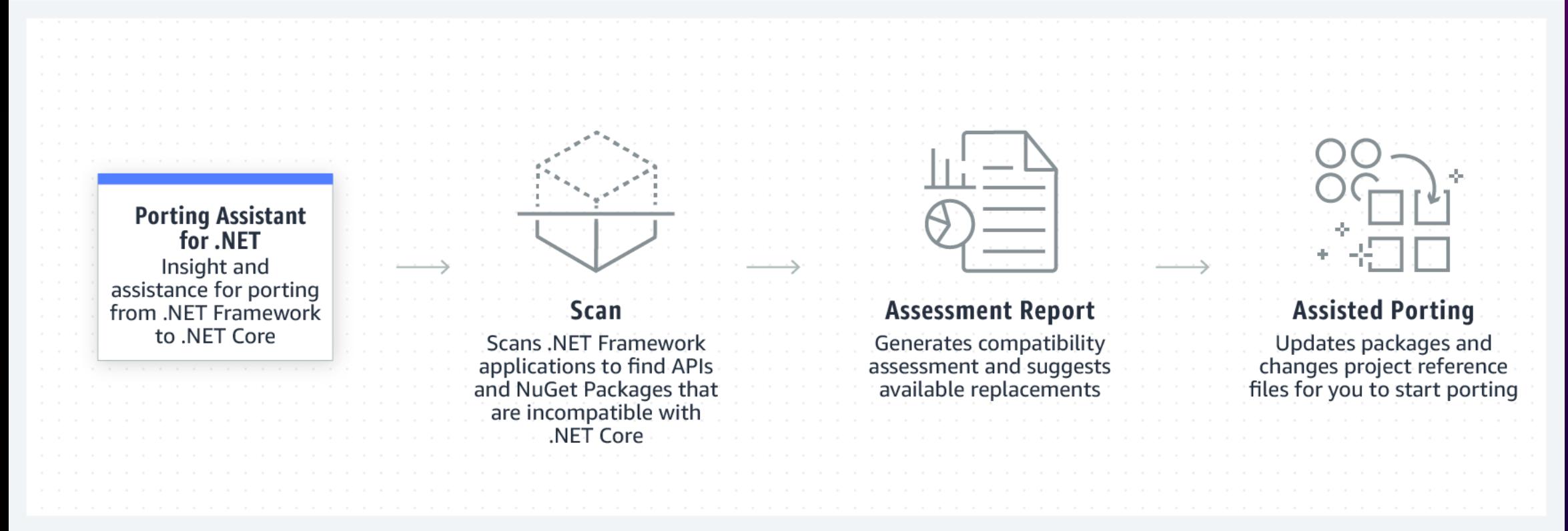
Benefits

- Quickly prioritize
- Project and solution assessment
- Assisted porting



AWS Porting Assistant for .NET – How it works

Migrating from .NET Framework on Windows to .NET Core on Linux



Start the workshop!



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Thank you!

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