Microsoft

擁抱新一代開發技術
加速開放創新

Peter Hu 胡德民

台灣微軟
專家技術部總經理

微軟今天的使命

Empower every **developer** and every **development team on** the planet to achieve more.

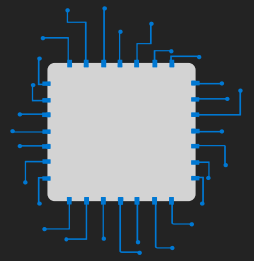
幫助全世界的每位開發人員、每個開發團隊都能貢獻更多、成就更大

Reimagine Taiwan
新定向，新台灣
微軟加碼投資台灣
打造亞洲數位轉型中樞
成立全球第 66 座資料中心區域
Microsoft Reimagine Taiwan
REIMAGINE TAIWAN
Microsoft Reimagine Taiwan
REIMAGINE TAIWAN

發展數位台灣，微軟三大計劃藍圖

產業 AIoT 人才培育

- 培育企業數位轉型策略規劃人才，幫助企業啟動轉型策略
- 協助企業 AIoT 技術轉移與平台建立
- 運用微軟生態系資源，幫助台灣企業走向市場 (Go to Market)



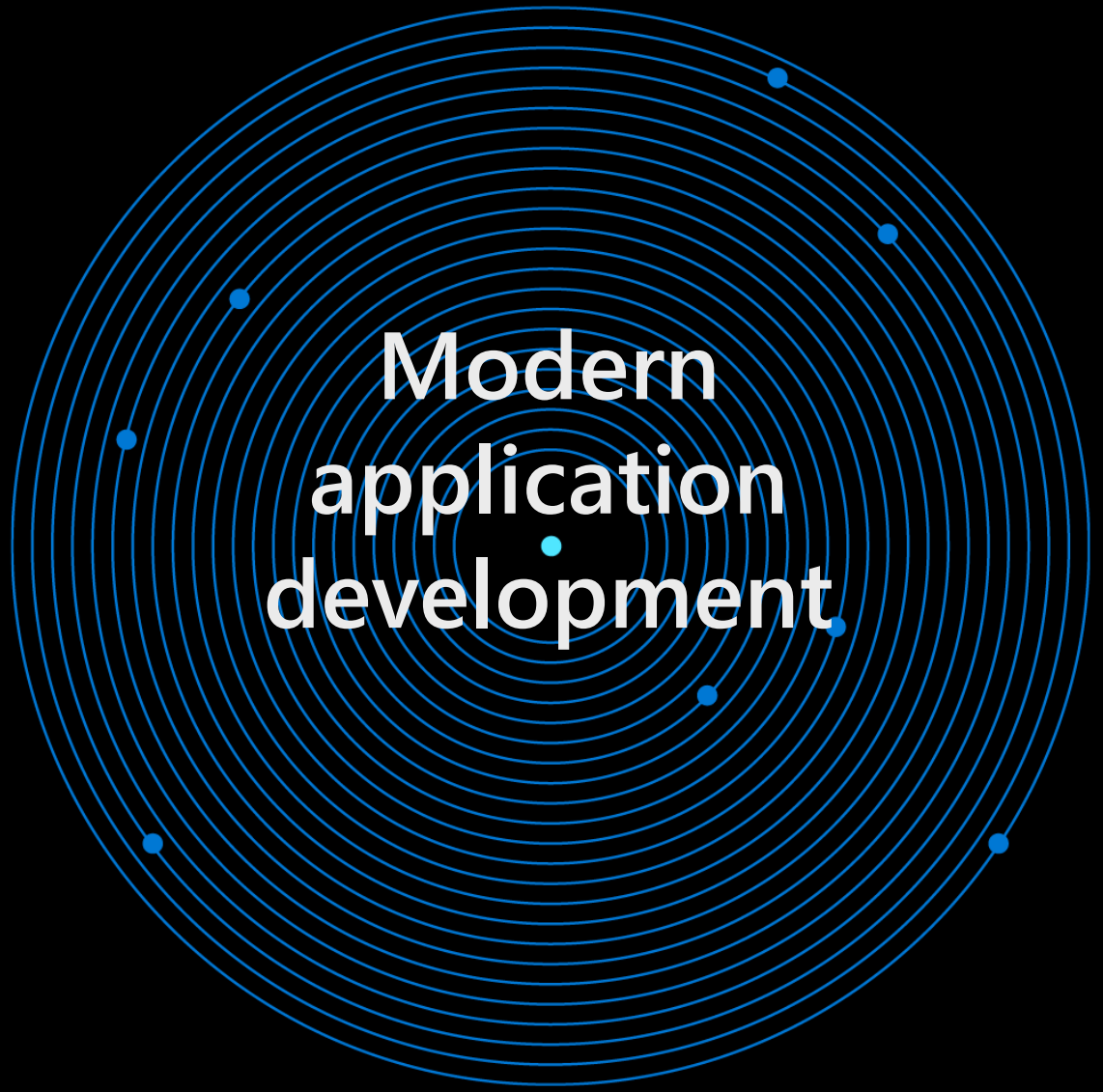
高科技製造業轉型

- 接軌國內外製造業與軟體服務夥伴，於微軟生態系
- 透過 AI、物聯網等科技，升值現有產品、產能與營運模式
- 打造創新商業模式，磨合生態系夥伴共同迎向新市場與新商機

Microsoft Azure

加速響應變化，

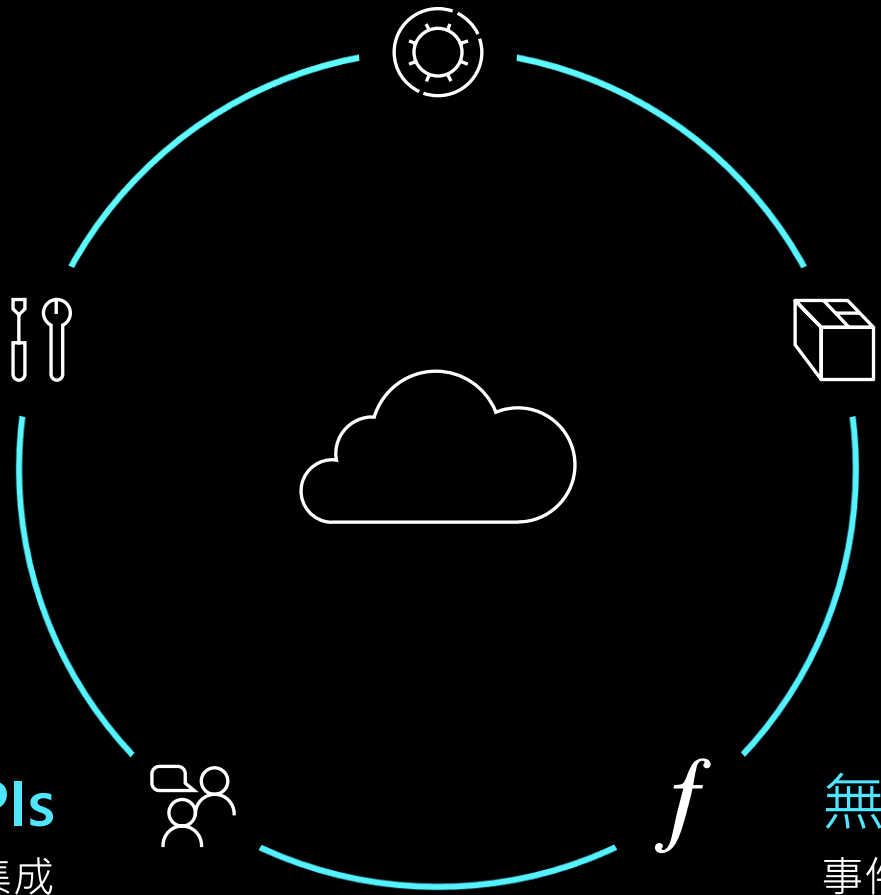
優化成本並持續交付價值



大趨勢：軟體雲端化

微服務

以模組化，鬆耦合服務的形式作為系統開發架構的實踐



容器化

標準化部署格式，可從底層基礎結構差異中提取程式碼

無伺服器服務

事件驅動的隨用隨付服務，實踐事件觸發的程式碼功能

APIs

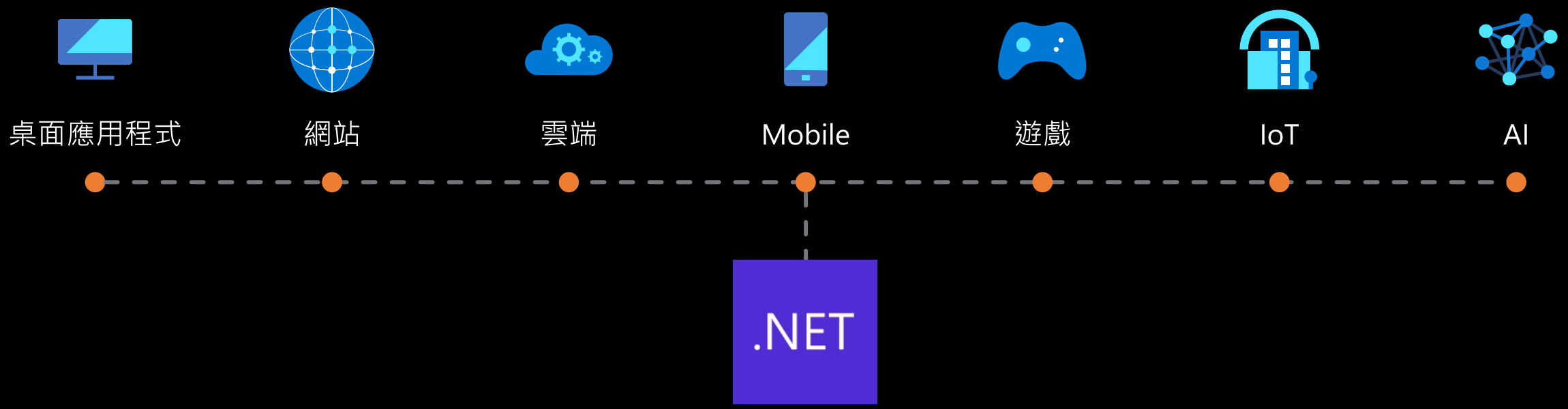
將服務打包成輕量級API，以便更輕鬆地集成

DevOps

開發及維運人員、流程和技術的結合，持續交付使用者最終價值

.NET

構建任何服務的平台



.NET 生態系熱潮

>1.5 M
.NET Core 開發人員

in Visual Studio

#1
最受喜愛框架 (2019 & 2020)

.NET Core

stackoverflow

Top 30
頻繁更新的開源專案

github.com/dotnet
github.com/aspnet

.NET Foundation

前 5
GitHub 上專案採用之程式語言

C#

7x
效率高於 Node.js

ASP.NET Core

TechEmpower

40%
新的.NET使用者為學生

dot.net download survey

insights.stackoverflow.com/survey/2019#most-loved-dreaded-and-wanted & insights.stackoverflow.com/survey/2020#most-loved-dreaded-and-wanted
github.com/cncf/velocity/
octoverse.github.com/
www.techempower.com/benchmarks/#section=data-r18&hw=ph&test=plaintext

.NET Application Architecture

www.dot.net/architecture

Microservices & Docker

Microservices are small, modular, and independently deployable services. Docker containers (for Linux and Windows) simplify deployment and testing by bundling a service and its dependencies into a single unit, which is then run in an isolated environment.

- Architecture e-book: PDF | Web | MOBI | EPUB
- DevOps e-book: PDF | Web
- Video
- Sample App
- Patterns

Modernizing .NET Apps

Lift and shift your existing .NET applications by optimizing your deployments with Windows Containers and by improving your DevOps operations for your dev/test/production environments, ultimately making your application cloud DevOps-ready.

- Architecture e-book: PDF | Web | MOBI | EPUB
- ASP.NET Sample Apps
- Migrate to cloud

Deploying with Azure

Production ready cloud applications need to be built for scalability, monitoring, management, security, resiliency, and more. The patterns covered in this guidance include example implementations for Microsoft Azure.

- Reference Architectures
- Best Practices
- Patterns
- Free Course

ASP.NET Web Applications

ASP.NET Core allows you to build high-performance, cross-platform web applications. Patterns like MVC and built-in support for Dependency Injection allow you to build applications that are easier to test and maintain.

- Architecture e-book: PDF | Web
- Sample App
- Migrate to cloud

Xamarin Mobile Apps

Xamarin allows you to build native Android, iOS, and Windows applications using .NET. Common patterns, such as MVVM, combined with good application layering, will maximize code sharing and result in an application that is easier to understand, test and maintain.

- Architecture e-book: PDF | Web
- Sample App
- Patterns

UWP Apps

Windows gives you the tools and capabilities to build modern experiences that empower your customers to do more. The Universal Windows Platform (UWP) lets you create a single app package that can run on a wide range of devices, and the Windows Store provides a unified distribution channel you can use to safely reach customers worldwide.

- Sample App
- Get Started
- Design Guidance

Visual Studio

適用於每個開發人員的地表最強開發工具

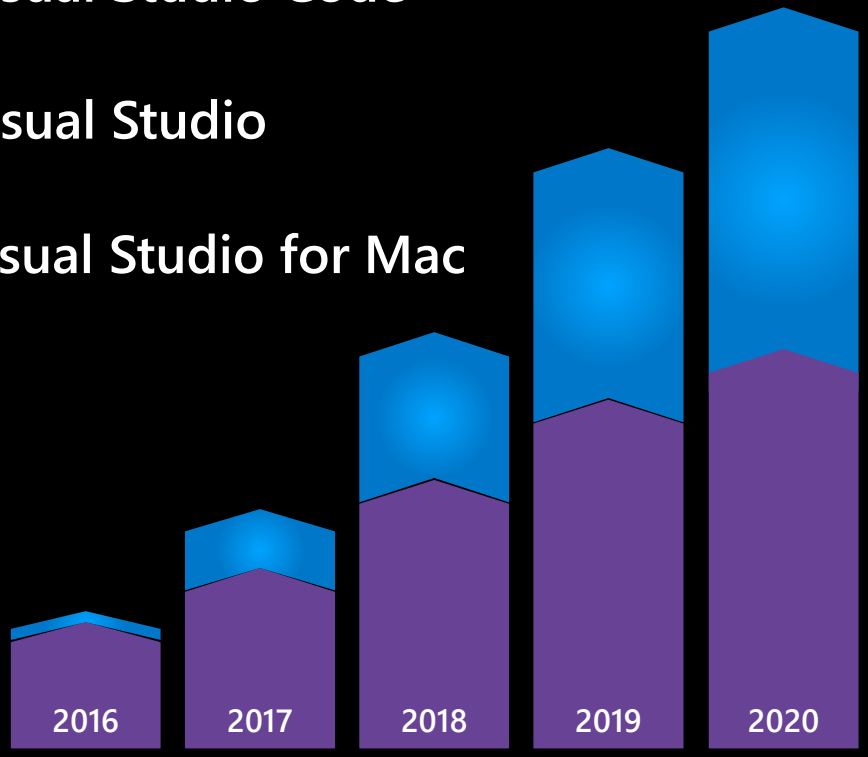
2 千萬

每個月之活躍使用者

Visual Studio Code

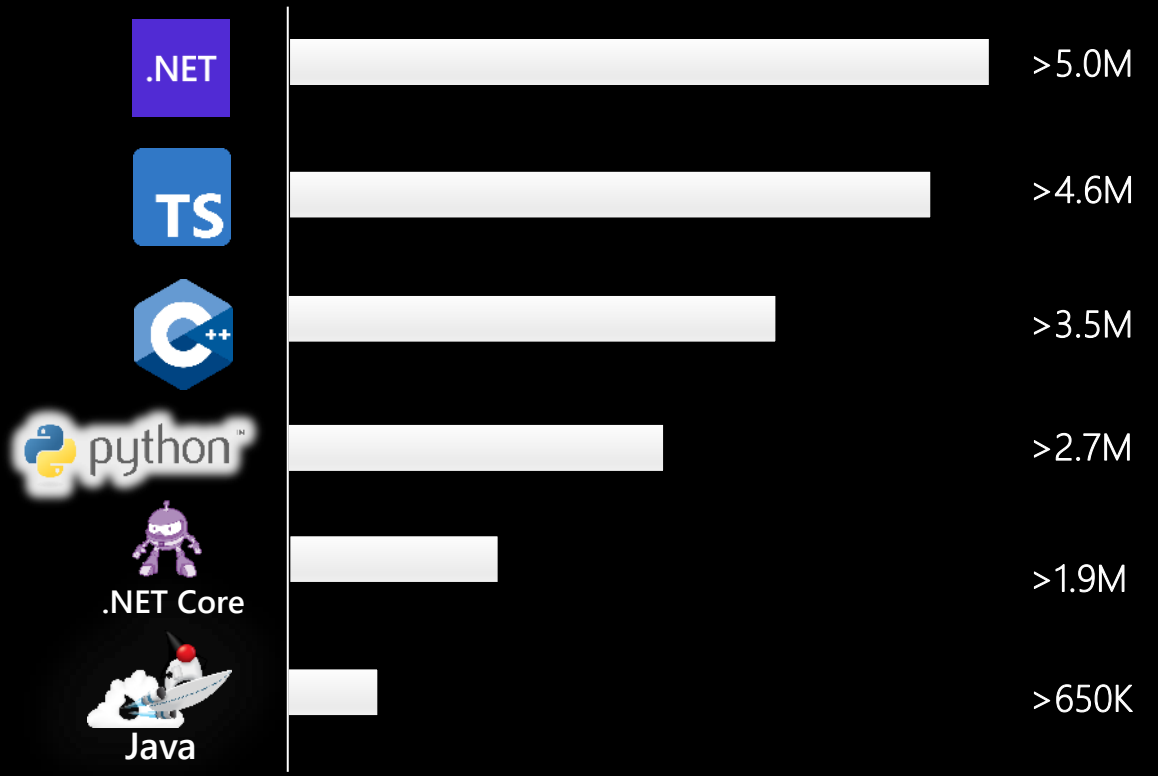
Visual Studio

Visual Studio for Mac



任何程式語言

每個月之活躍使用者



Microsoft ❤ Open Source

充滿熱忱的開源社群

19.1k
VS Code 貢獻者
(#1)

+346%
ASP.NET Core 總貢獻者
(#1)

+161%
採用 TypeScript 進行開發
(#5)

GitHub: *The State of the Octoverse, 2019*

Microsoft Depends Heavily on Java

LinkedIn

- 生產中超過1500多種Java微服務
- GitHub上有60多個Java開源項目

Azure

- 依賴Java的服務主要包括Azure HDInsight、Azure Databricks 和 Azure Spring Cloud

Yammer

- 大部分後端都採用 Java 實現

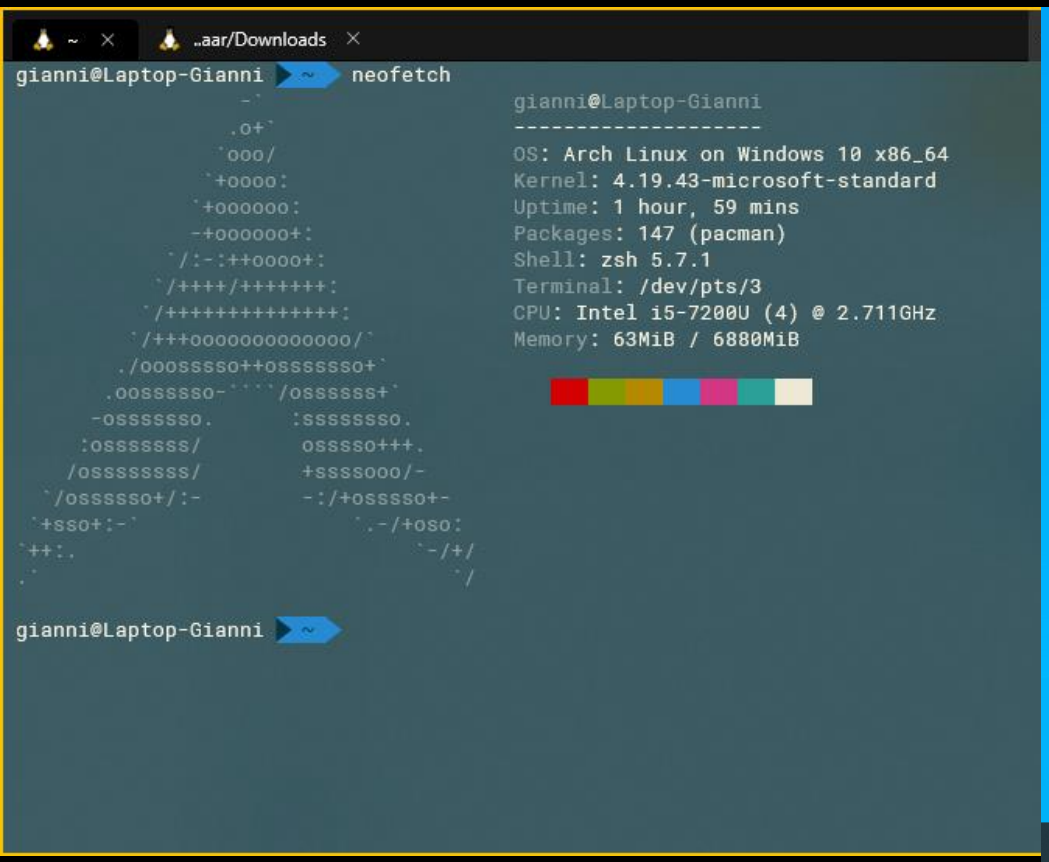
Mojang's Minecraft

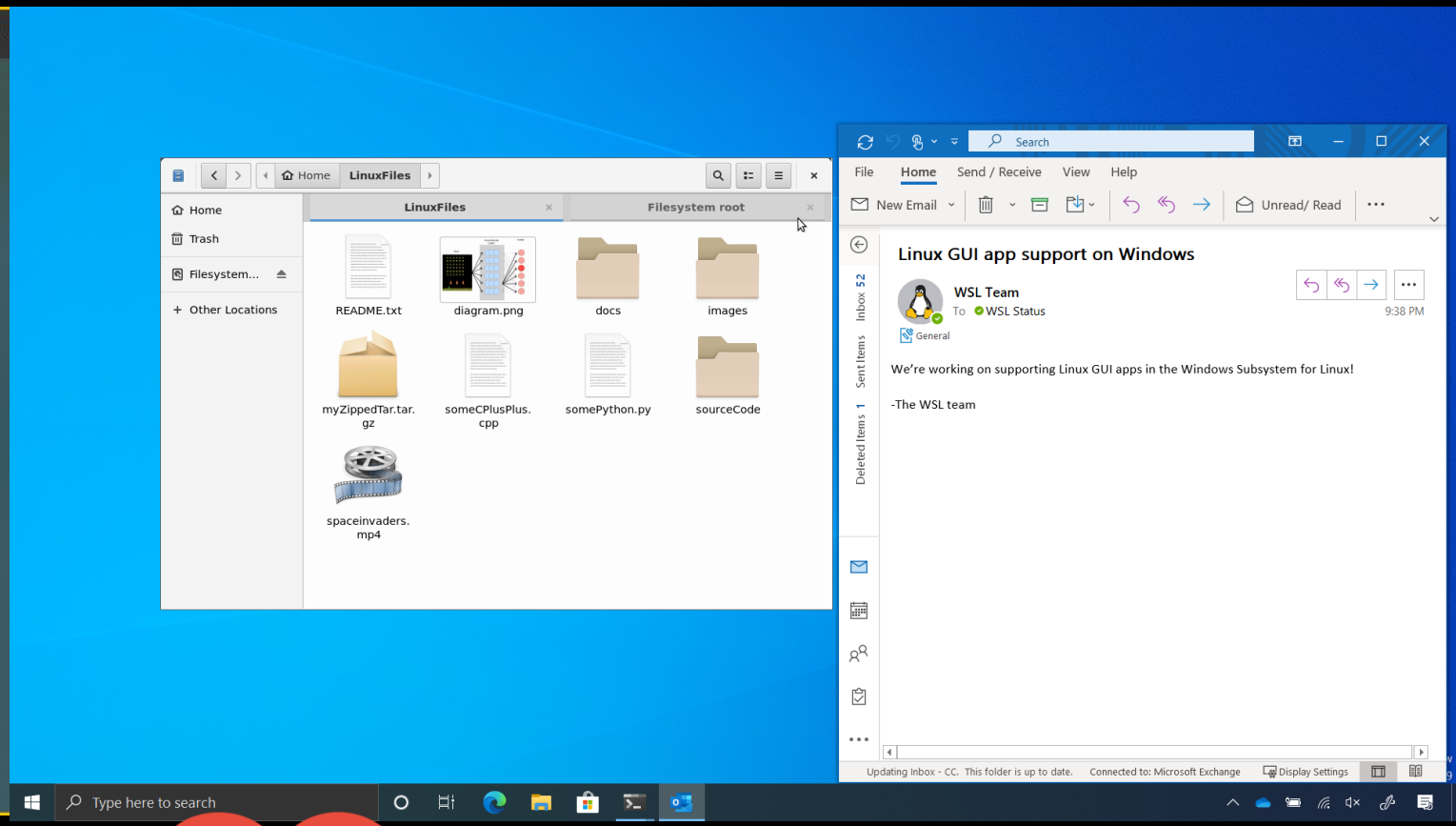
- 數以百計的 Java 內建服務器
- 客戶端 Java版仍然很受歡迎

Android

- 微軟在 Google Play 商店中發布的 50 多種應用
- （例如：Office，Dynamics，XBox，Power Apps 等）
- 最新型的 Surface Duo 手機基於Android OS 而生

Windows Subsystem for Linux 2 (WSL 2)





Microsoft ❤ Linux

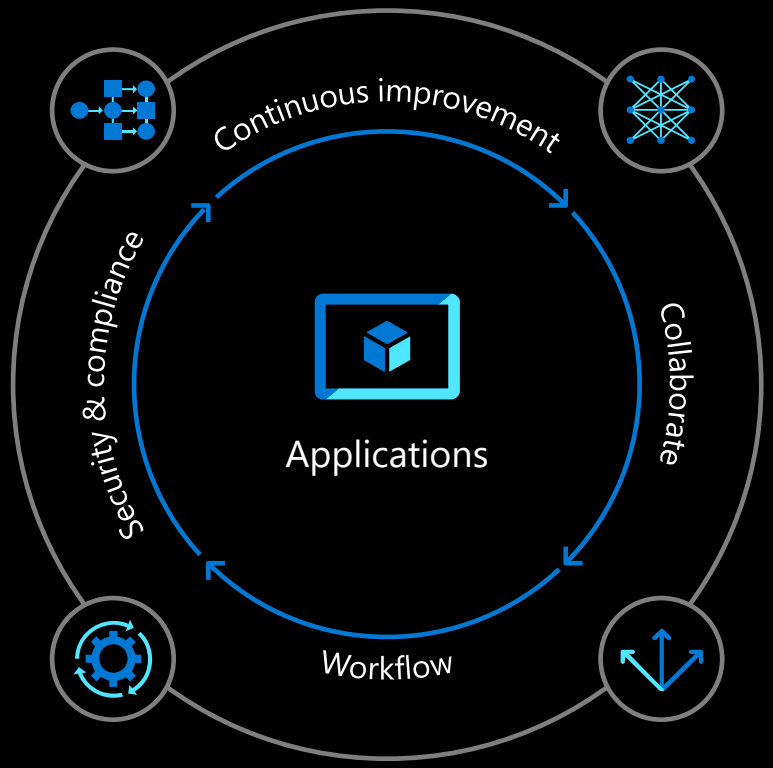
採用 Azure DevOps + GitHub 策略實現 軟體交付

專案管理及規劃

構思、定義使用場景，
描述功能並追蹤成效

開發

撰寫、測試、檢查並集成高品質
的應用程式

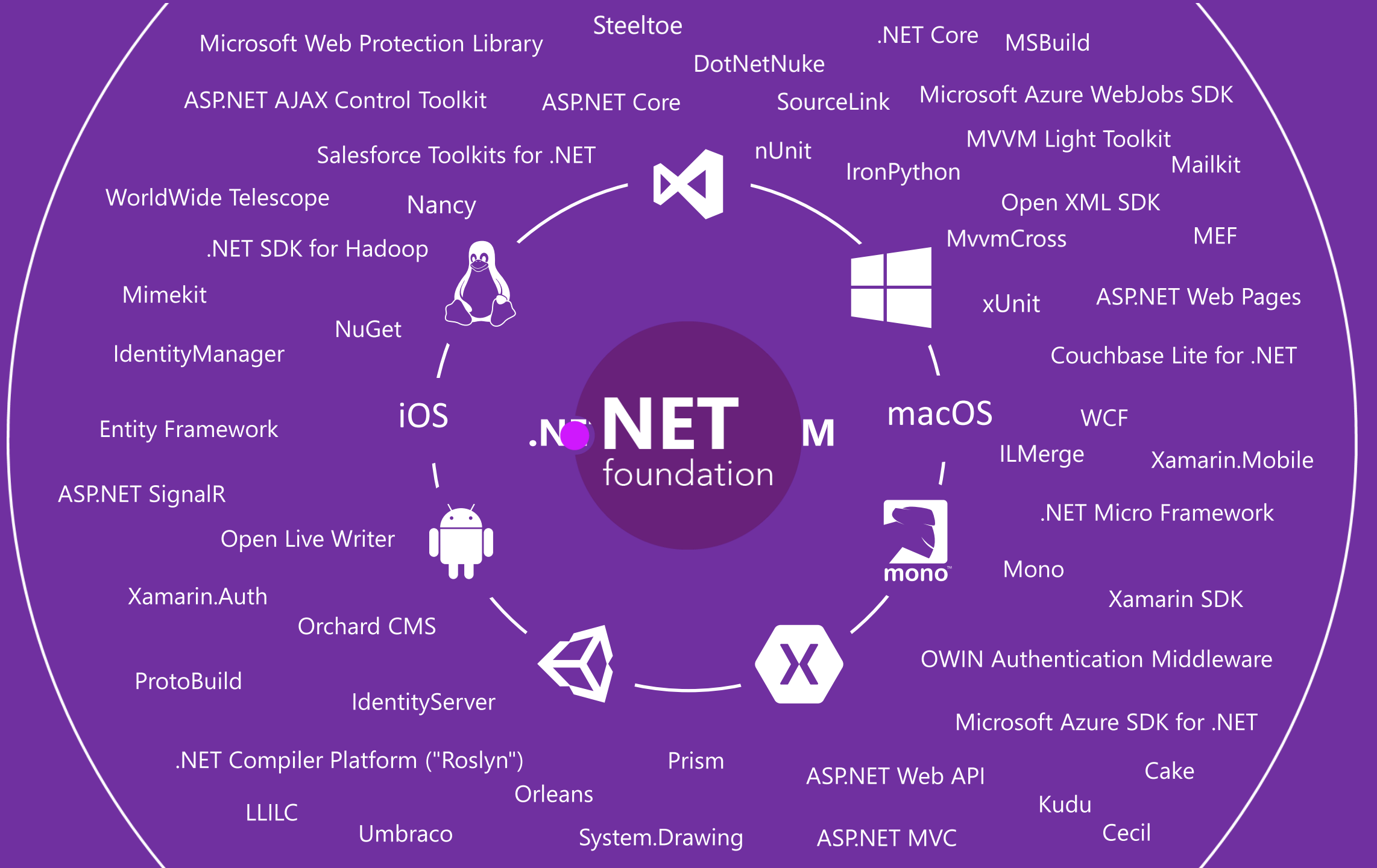


維運

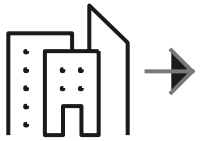
維運、監控並排除故障以確保
系統的可靠性和高可用性

交付

以一致且可靠的方式將應用程式
部署到完全配置的環境中


Steeltoe
Microsoft Web Protection Library
.NET Core
MSBuild
DotNetNuke
ASP.NET AJAX Control Toolkit
ASP.NET Core
SourceLink
Microsoft Azure WebJobs SDK
MVVM Light Toolkit
Salesforce Toolkits for .NET
nUnit
IronPython
Mailkit
WorldWide Telescope
Nancy
Open XML SDK
MvvmCross
MEF
.NET SDK for Hadoop
Mimekit
xUnit
ASP.NET Web Pages
NuGet
IdentityManager
Couchbase Lite for .NET
iOS
macOS
Entity Framework
WCF
ILMerge
Xamarin.Mobile
ASP.NET SignalR
.NET Micro Framework
Open Live Writer
mono
Mono
Xamarin.Auth
Xamarin SDK
Orchard CMS
OWIN Authentication Middleware
ProtoBuild
IdentityServer
Microsoft Azure SDK for .NET
.NET Compiler Platform ("Roslyn")
Prism
ASP.NET Web API
Cake
Orleans
Kudu
LLILC
Umbraco
System.Drawing
ASP.NET MVC
Cecil
.NET foundation

軟體上雲之道



	REHOST	REFACTOR	REARCHITECT	REBUILD/ BUILD NEW
Description	重新部屬至雲端服務	更輕量且彈性的應用程式 有效運用雲服務	對應用程式進行重大 架構分解及構建	採用 **Cloud Native** 技術建構 新系統或對舊系統重構
Drivers	• 釋放資料中心空間 • 快速得到顯著投資報酬率	• 更快、更短的更新 • 程式碼可移植性 • 更高的雲效率（資源、速度、成本）	• 易於擴展的應用程式規模及敏捷性 • 更輕鬆地採用新的雲功能 • 混合技術堆疊	• 加速創新 • 更快地構建應用程式 • 降低運營成本
Technologies	基礎設施及服務(IaaS)	平台及服務(PaaS) 容器化	平台及服務(PaaS) 無伺服器服務 微小服務	

Results

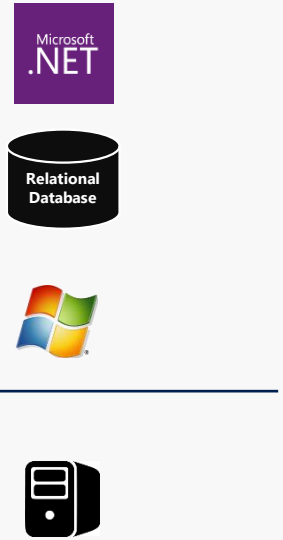
IaaS: 435% ROI, 73% reduction in datacenter footprint and 83% reduced IT outsourcing cost.[1]

PaaS: 466% ROI, 80% time saved, 5.91M NPV, 50% faster deployments.[1]
Container: 13x more releases, 10x cost reduction, 65% faster developer onboarding, 62% better availability. [2]

.NET 應用程式上雲

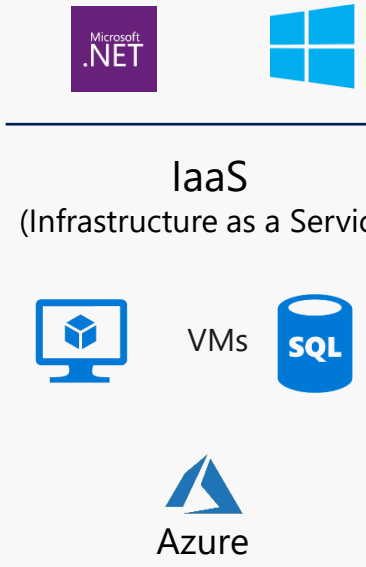
現有應用程式
.NET Web 應用程式(地端)

單體式 / N-Tier
架構



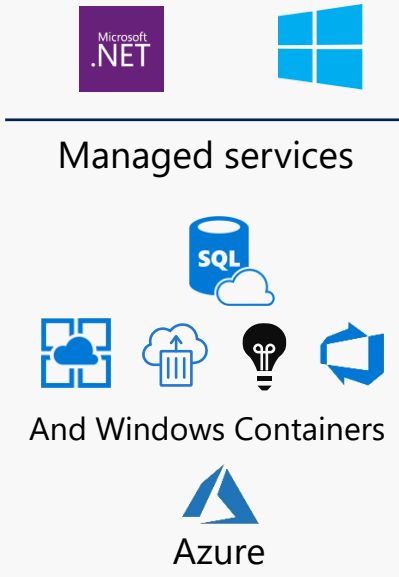
雲
基礎設施就緒

單體式 / N-Tier
架構



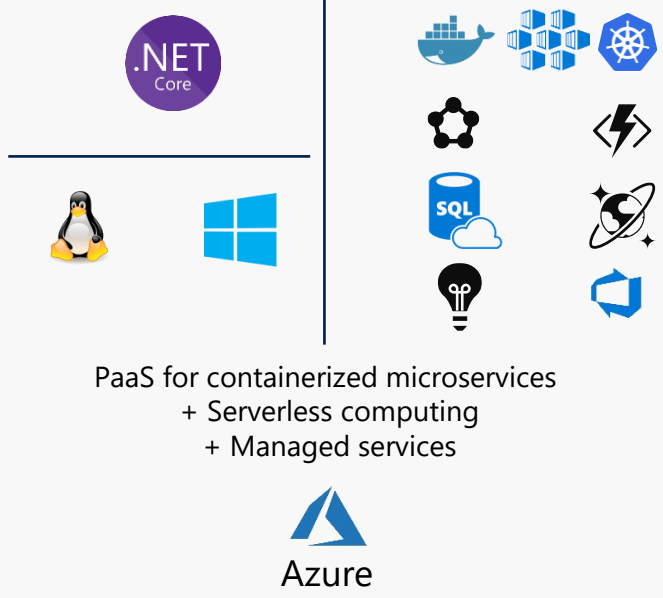
雲架構優化
PaaS

單體式 / N-Tier
架構



Cloud-Native
用於微服務及無伺服器的PaaS

微服務 及 無伺服器 架構



Base Cloud Environment and cross-cutting concerns: Network, Hybrid-cloud, Identity/Auth, Cost control and Operations model

Migrate / Rehost

Modernize

Minimal code changes

Architected for the cloud, new code

stackoverflow

Stackoverflow 遷移到.NET Core 3.0，以獲得更好的效能，更快的開發體驗及實踐容器化技術

Microsoft

Stack Overflow

THANK YOU