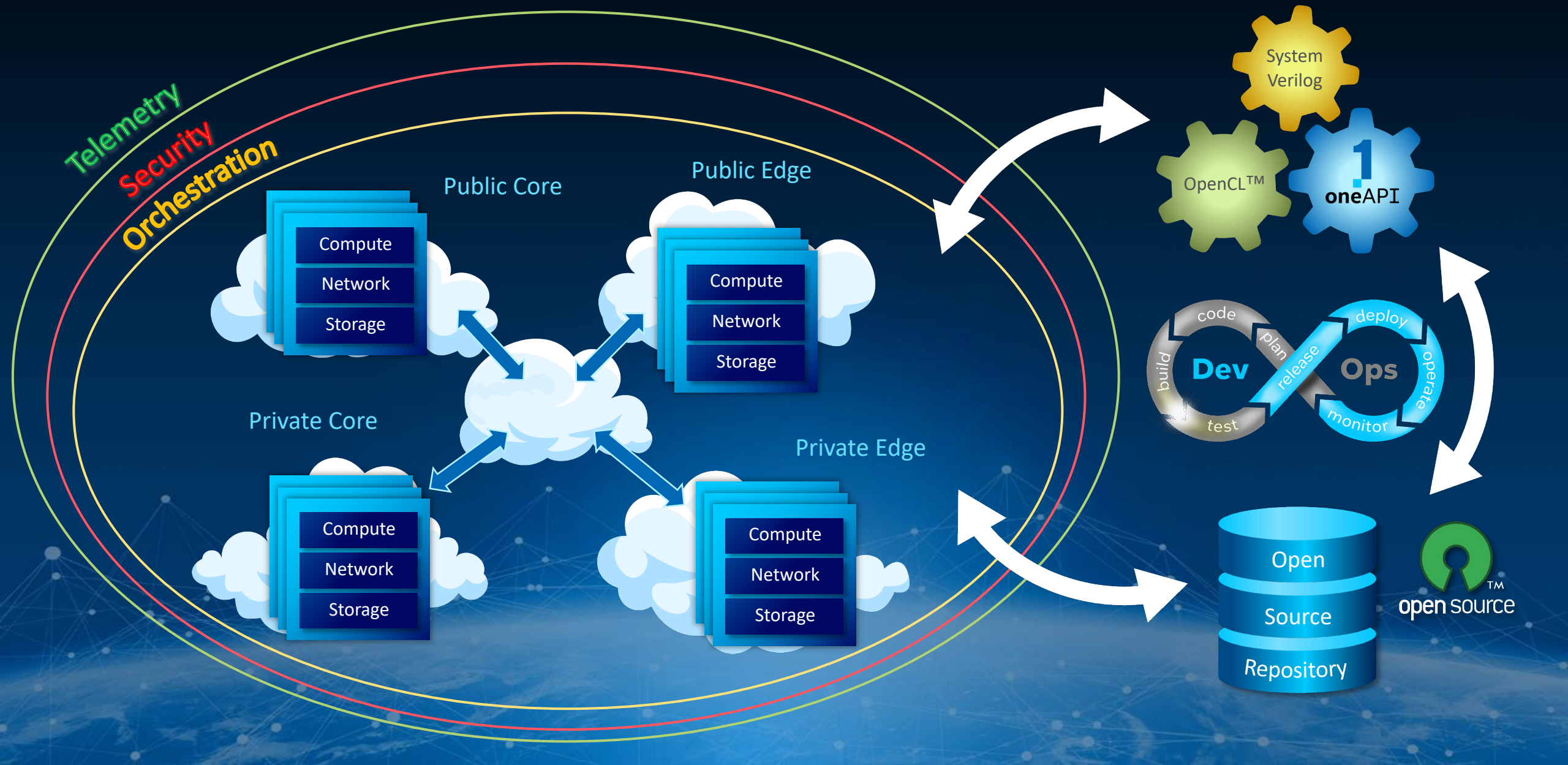
Presentation Focus

- Heterogeneous Compute in a Cloud Native Environment

Who Am I?

- I graduated in 1987 from Purdue University with a degree in Electrical Engineering
- I've been working in high tech for 35 years
  - Motorola, Five Silicon Valley Startups, F5 Networks, Amazon, Intel (for about one year now)
- The first half of my career as a Software Design Engineer, ASIC Design Engineer, FPGA Design Engineer
- The second half of my career leading design and architecture organizations
- Primary focus is in Networking and Computer Architecture
- At Intel my role is a staff level strategy position where I focus on how Intel HW/SW/Systems enable future Cloud Computing. Focused primarily on FPGAs.

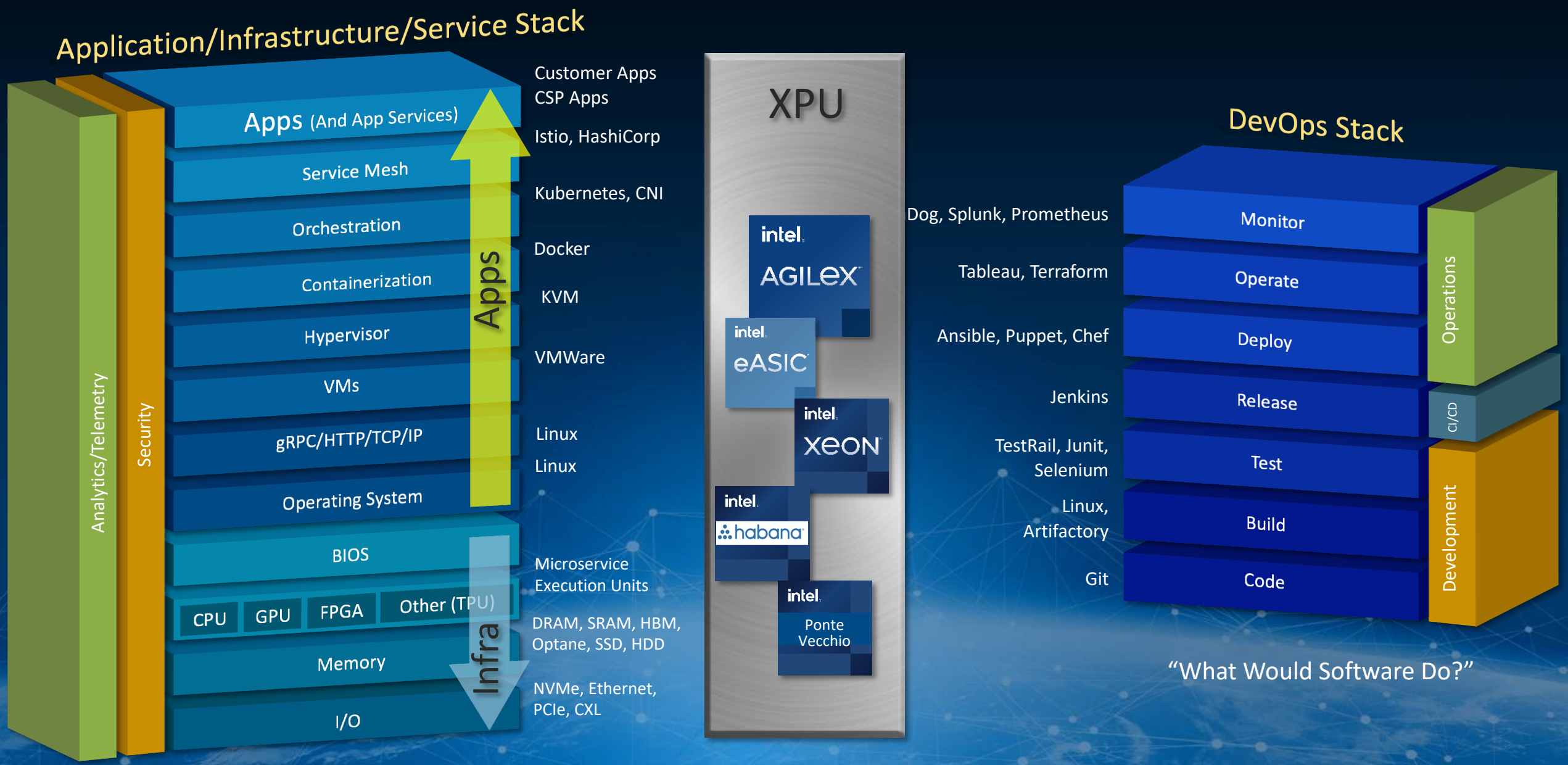
FPGAs in a Multi Cloud Environment



Multi-Cloud & Hybrid-Cloud

- Public Cloud scale and Private Cloud specialization
- Cloud federation and orchestration supports distributed solutions on common stacks
- DevOps development flows allow for speed and distributed application integration
- Library Based Repos support open domain specific full-stack solutions, community and reuse
- End-to-end systems that orchestrate compute across Application:Network:Storage layers

Heterogeneous Compute

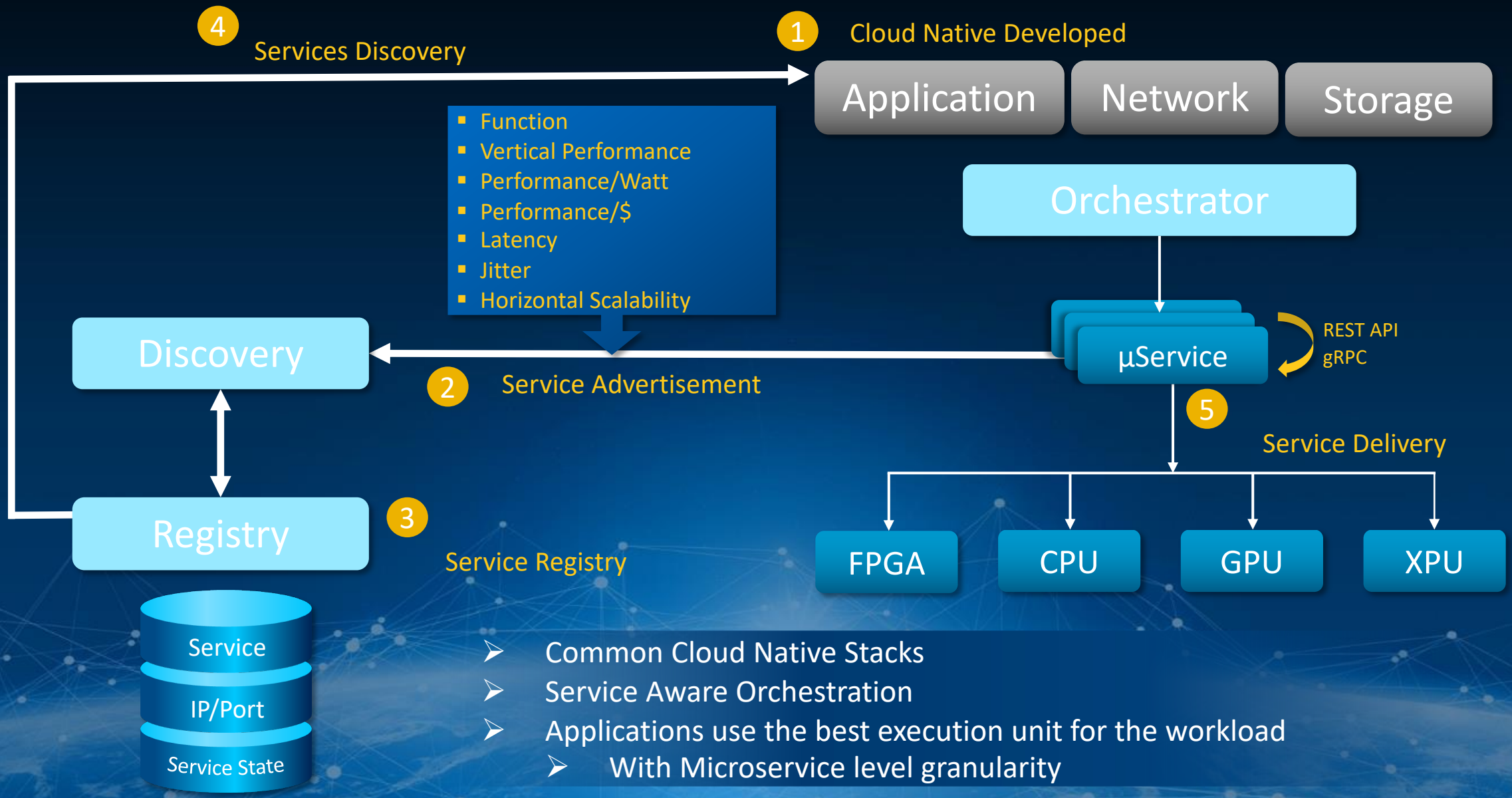


"What Would Software Do?"

Cloud Stacks

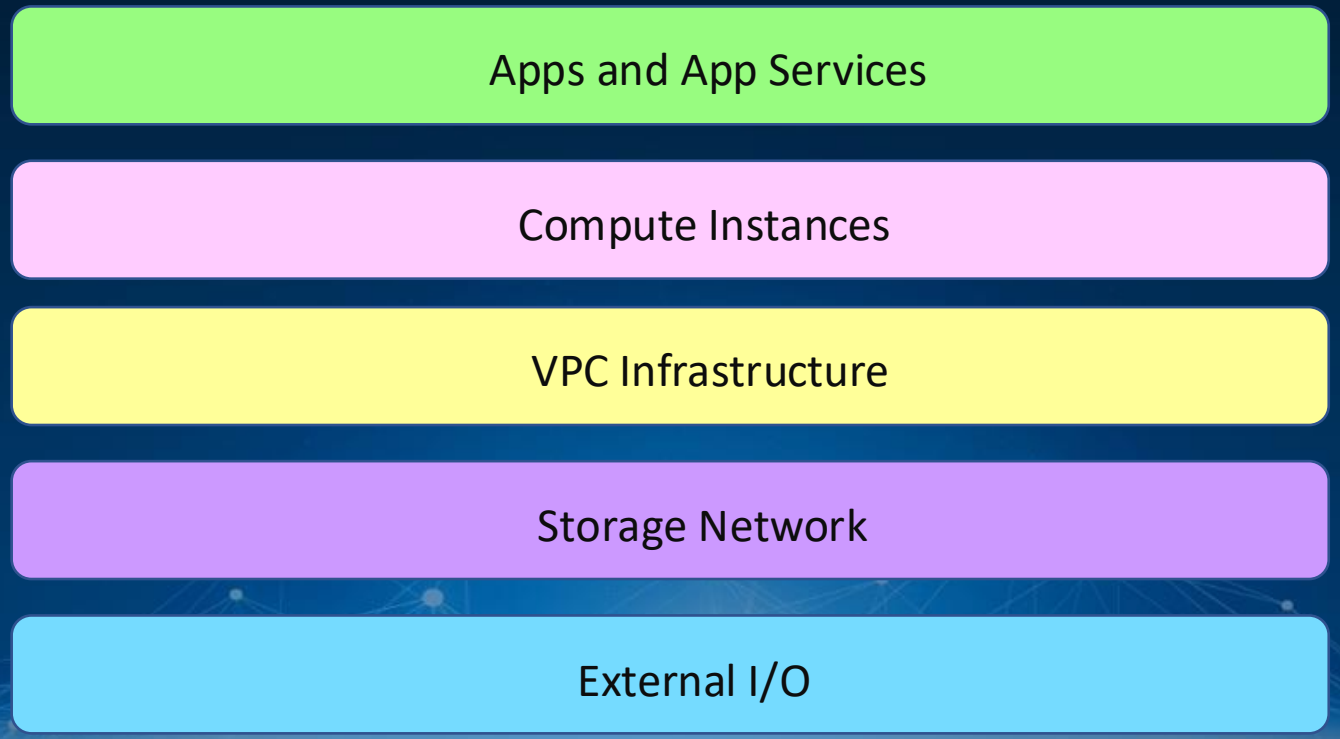
- Cloud Native Stacks allow for low friction integration and scale
- DevOps Development/Test/Release/Operate allows for Speed and Reuse
- Make heterogeneous compute accessible to more developers

A Microservice Life Cycle



- Common Cloud Native Stacks
- Service Aware Orchestration
- Applications use the best execution unit for the workload
  - With Microservice level granularity

Cloud Layers



Cloud Layers

- Cloud Layering allows for scale, services management, security
- Locate the workload in the stack layer on the compute platform best suited for execution
- Hardware acceleration at Compute, Network, Storage Layers
- Cloud Provider and Customer Persona Evolution

- Infrastructure as a Service, Platform as a Service, Managed Services
- Multi-tenant, composable, infrastructure
- Monolithic Applications
- Virtual Machines supports Lift and Shift on known framework
- Cloud Native Containerization of Workloads. Composable, Disaggregated, Distributed
- Orchestration of Application, Network & Storage Services
- DevOps Development, Test, Release, Operate
  - Speed and reuse
  - Make heterogeneous compute accessible to more developers

FPGA Developer Evolution