Simplification et Cloudification avec PowerVC (démonstration)

Alain Cyr – cyralain@fr.ibm.com
Frederic Dubois – fred.dubois@fr.ibm.com
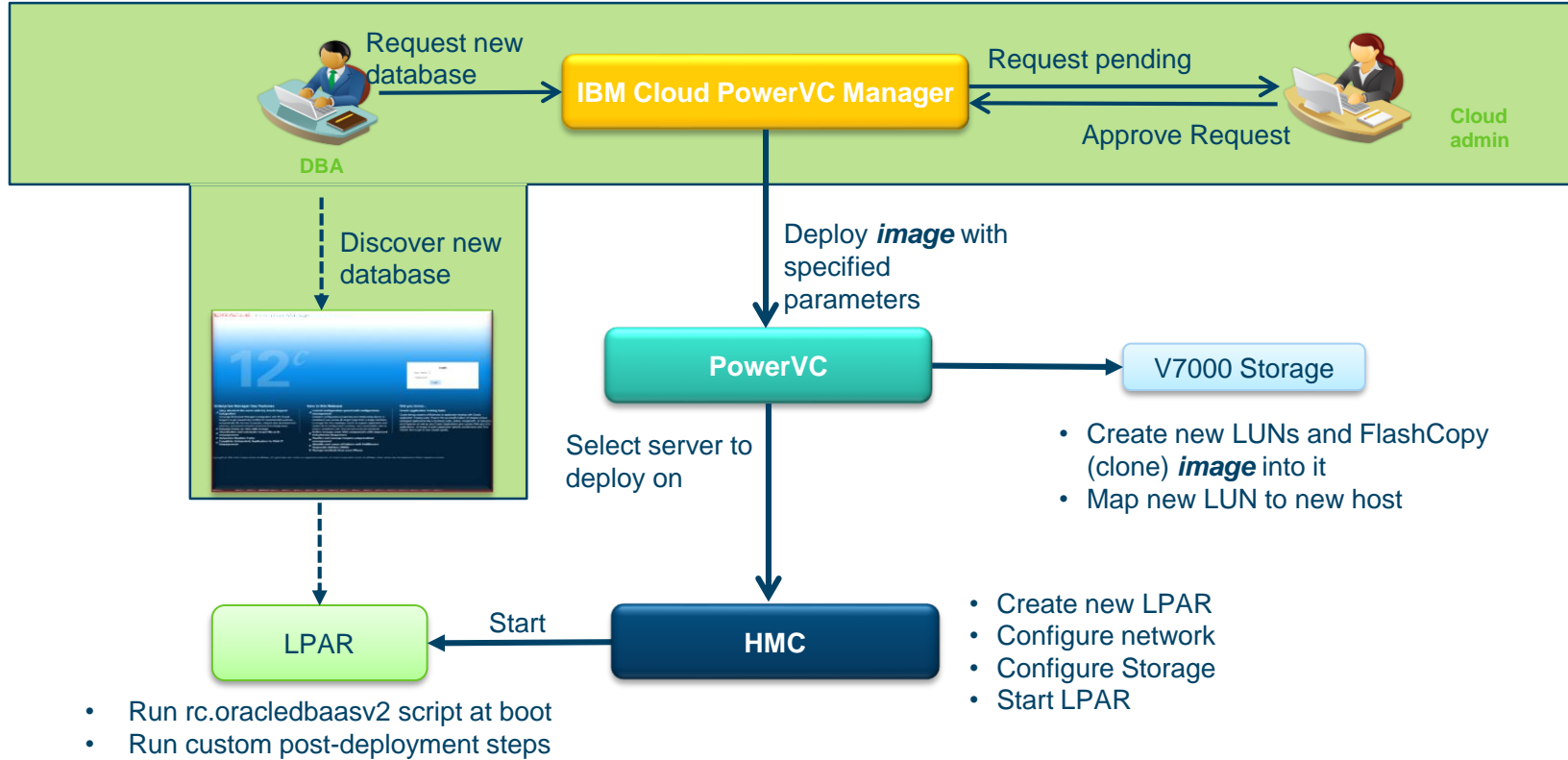IBM Client Center Montpellier
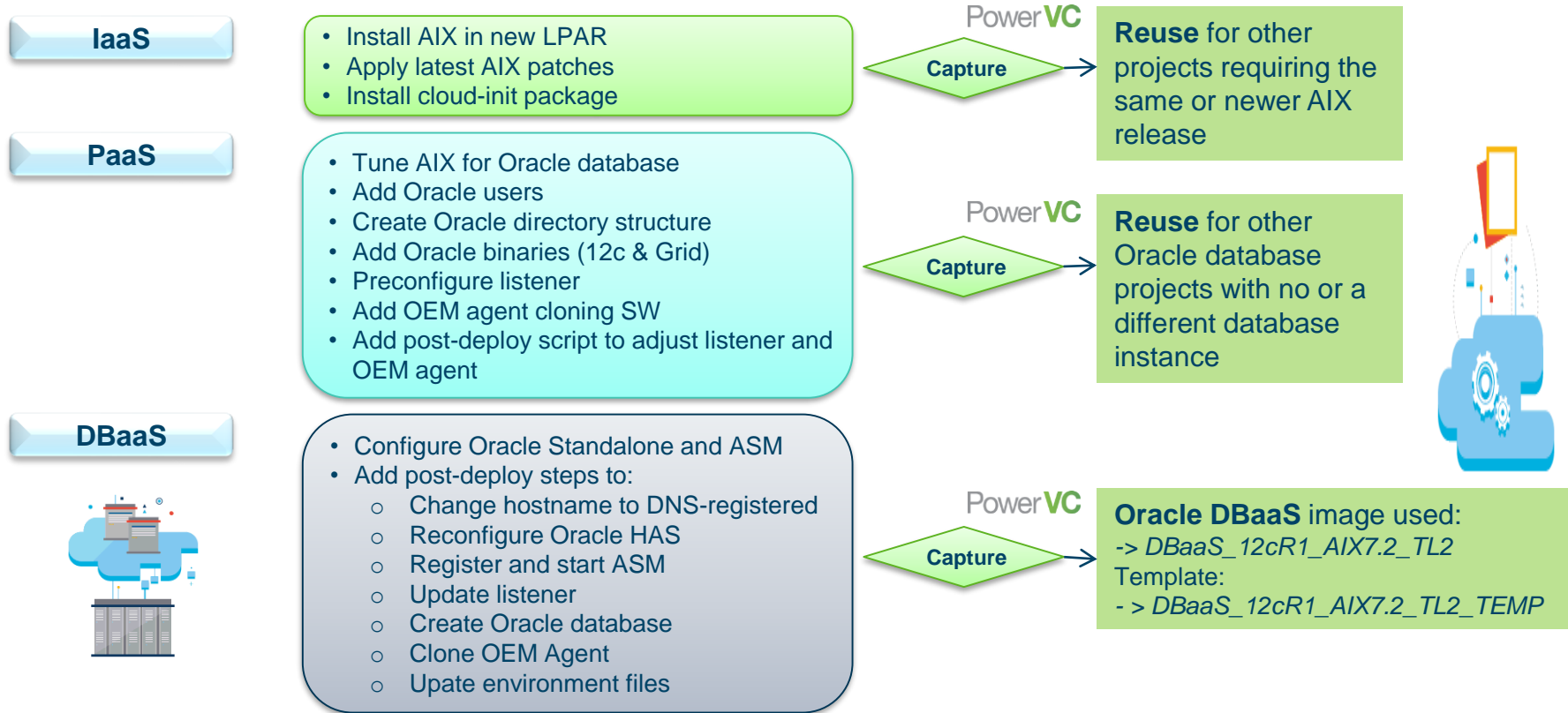
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What Can PowerVC do for you?

"A simple tool to quickly roll out LPARs/Virtual Machines on Power Systems"

▪ Easily clone, copy and relocate Power Systems virtual machines – Improve virtual machine consistency through replication – Policy-based placement of new and relocated virtual machines – Complete virtual machine management: Storage, Compute, Network

▪ Quick and easy installation to get you up and running quickly – One button verification of stack integration and operational environment – Simplify operations by not having to logon to HMC, VIOS, or storage to provision virtual machines

▪ Build a Private Cloud with PowerVC + Upward integration to cloud managers for private cloud management – Build on OpenStack APIs for automation and extensibility

Demo: Oracle DBaaS deployment steps

Request new database → **IBM Cloud PowerVC Manager**

DBA

Request pending →

← Approve Request

Cloud admin

Discover new database

12^c

Deploy *image* with specified parameters

PowerVC → V7000 Storage

Select server to deploy on

- Create new LUNs and FlashCopy (clone) *image* into it
- Map new LUN to new host

LPAR ← Start ← **HMC**

- Create new LPAR
- Configure network
- Configure Storage
- Start LPAR

- Run rc.oracledbaasv2 script at boot
- Run custom post-deployment steps

Steps to create reusable and deployable images with PowerVC

IaaS

- Install AIX in new LPAR
- Apply latest AIX patches
- Install cloud-init package

PowerVC

Capture

Reuse for other projects requiring the same or newer AIX release

PaaS

- Tune AIX for Oracle database
- Add Oracle users
- Create Oracle directory structure
- Add Oracle binaries (12c & Grid)
- Preconfigure listener
- Add OEM agent cloning SW
- Add post-deploy script to adjust listener and OEM agent

PowerVC

Capture

Reuse for other Oracle database projects with no or a different database instance

DBaaS

- Configure Oracle Standalone and ASM
- Add post-deploy steps to:
  - Change hostname to DNS-registered
  - Reconfigure Oracle HAS
  - Register and start ASM
  - Update listener
  - Create Oracle database
  - Clone OEM Agent
  - Upate environment files

PowerVC

Capture

Oracle DBaaS image used:
-> *DBaaS_12cR1_AIX7.2_TL2*
Template:
- > *DBaaS_12cR1_AIX7.2_TL2_TEMP*

Lab Environment Overview

POWER8 – S824 20 Cores

HMC

POWER9 Server – Legorhn
S924 – 16 Cores

POWER8 Server – SAPHANA2
S824 – 24 Cores

Available Capacity

AIX LPAR

Image Source (iaas)

IBM Cloud PowerVC Manager v1.4.2 (RHEL 7.2) 4 vcpus 14 GB

LPM Capable

Available Capacity

AIX LPAR

Image Source (dbaas)

AIX LPAR OEM 13c

4 Cores 32 GB

VIOS

VIOS

VIOS

VIOS

SVC (FlashSystem Pool, V7000 Pool)
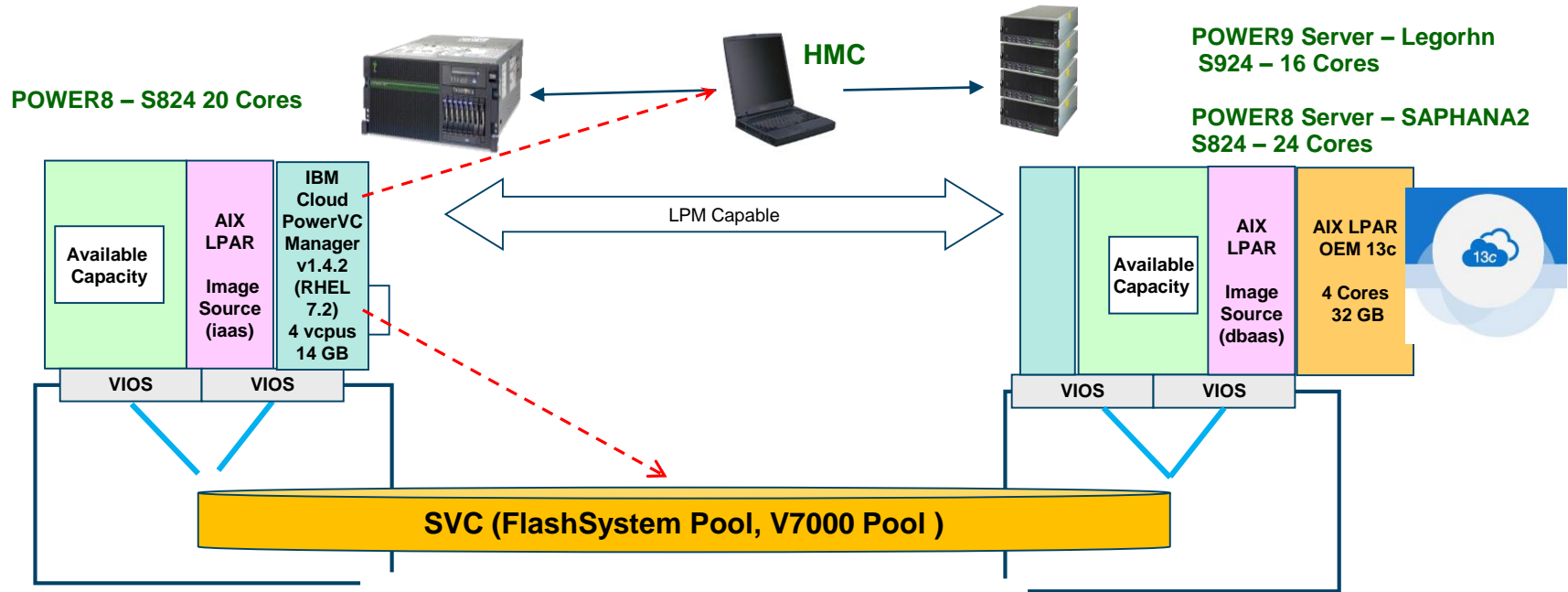
LPAR configuration after deployment
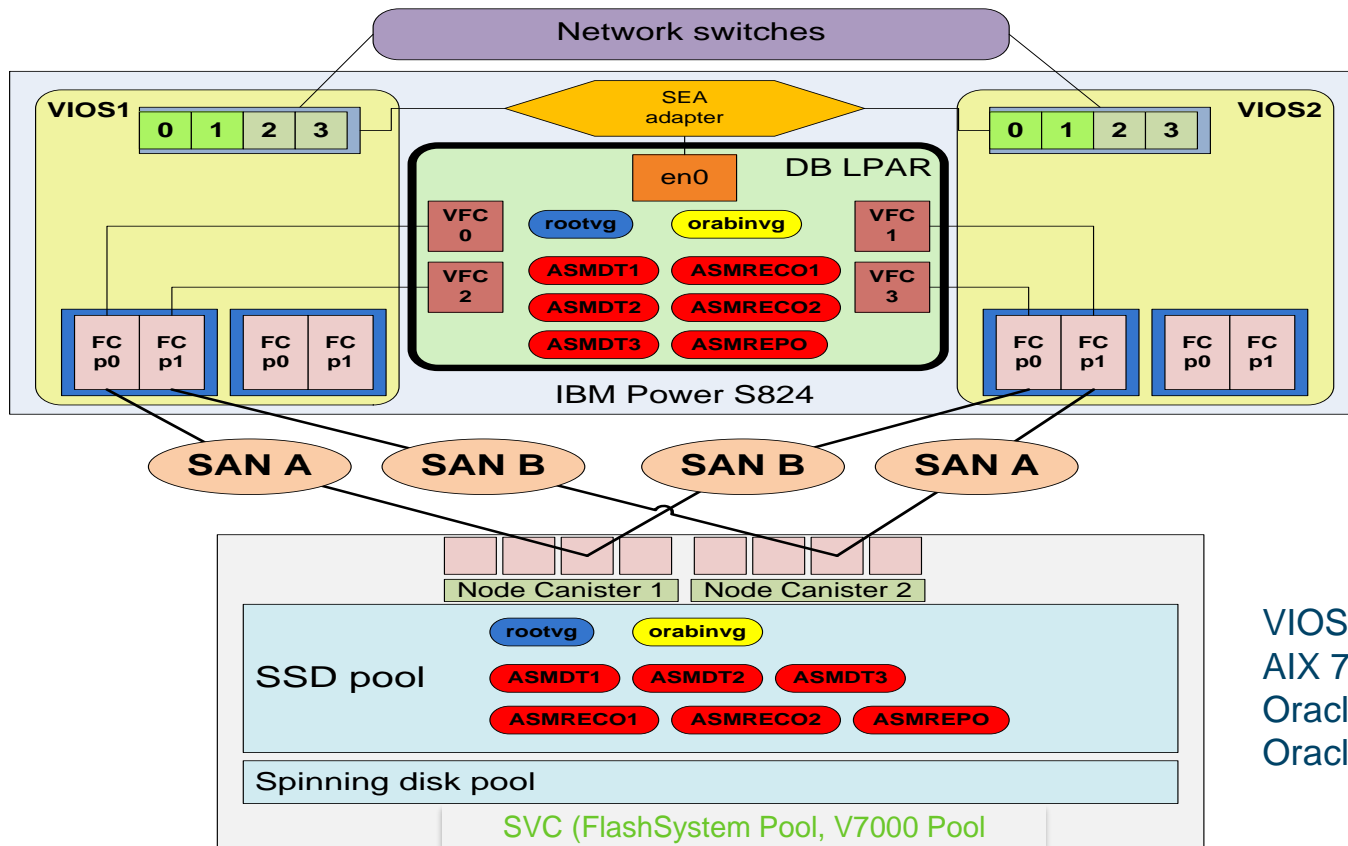
VIOS 2.2.4.23
AIX 7.2 TL02 SP2
Oracle grid: 12.1.0.2
Oracle DB: 12.1.0.2

What happens under the covers – Infrastructure

- Selection of IP address from pool in PowerVC

- LPAR creation via HMC

- SAN zoning

- LUN allocation

- LUN mapping to new LPAR

- Start of Flashcopy clone of deployment image to new LUNs
  - Operating System
  - Oracle binaries
  - ASM (Data & Recovery)

- Start of LPAR via HMC (data copy continues in background)

- Configure hostname and network settings

What happens under the covers – Oracle environment

Our self-developed scripts are triggered via an entry in "inittab" after the cloud-init completes

- Obtain the database name provided during the 'Deploy' process (db_name=*<dbname>)*
- Determine / set "real" hostname based on IP address and DNS
- Update the Oracle listener file (hostname / IP address)
- Re-configure Oracle Standalone Server
- ASM configuration based on best practice on AIX
- Create database instance
- Deploy the Oracle management agent to configure the new settings
- Remove post-deploy script entry from "inittab" if no errors occurred

Time Warp

Cloud admin "approve" to "open for user login" **~ 8-10 minutes**

Configure Oracle Restart (HAS), start ASM up, OEM Agent, create datbase, listener reconfiguration, DB rename **~ 8-10 minutes**
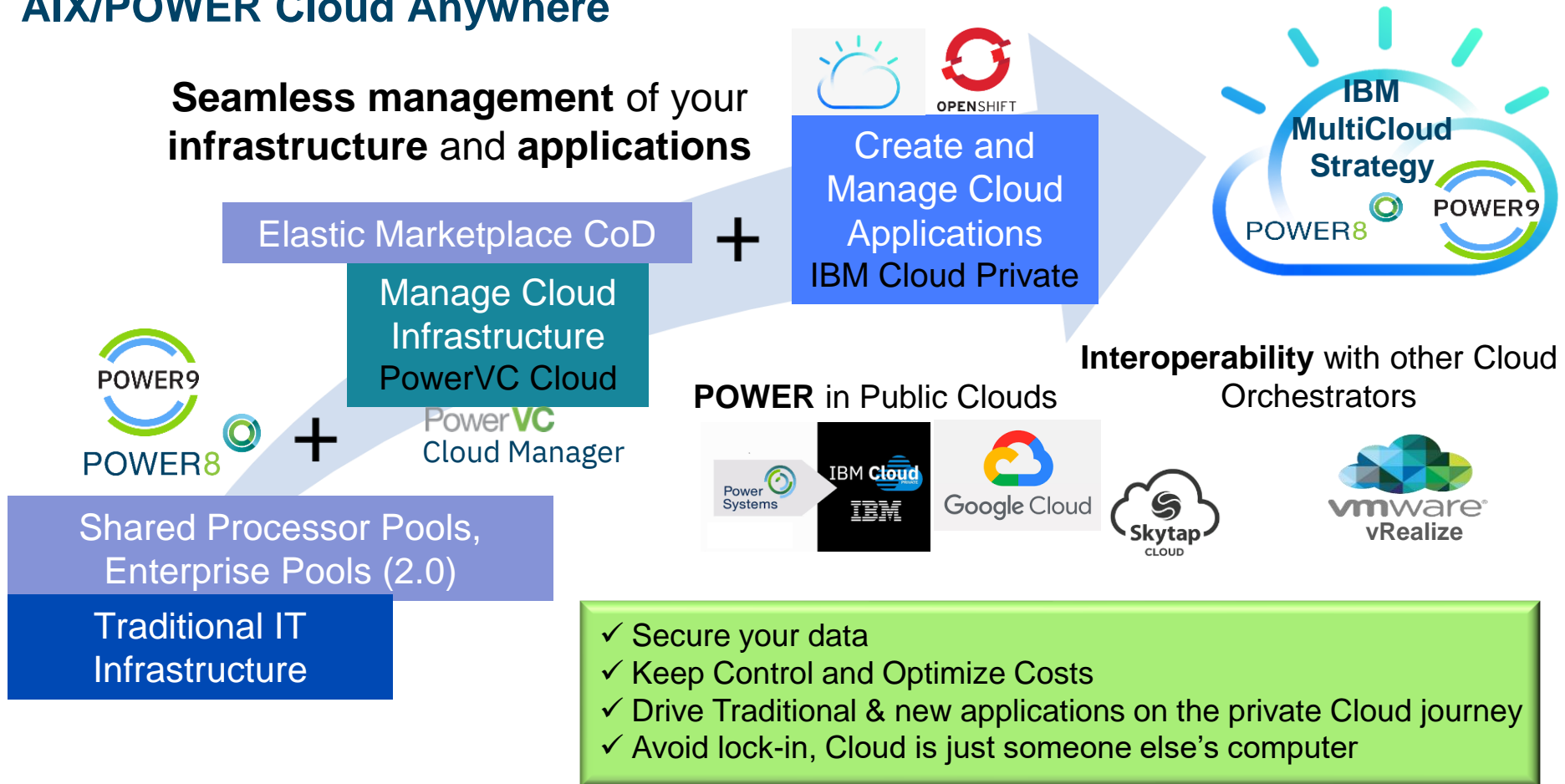
Overall time from creating request to being able to use the prepared Oracle Database is

approximately 15 - 20 minutes !

AIX/POWER Cloud Anywhere

Seamless management of your **infrastructure** and **applications**

IBM MultiCloud Strategy
POWER8 POWER9

Elastic Marketplace CoD

Create and Manage Cloud Applications
IBM Cloud Private

+

Manage Cloud Infrastructure
PowerVC Cloud

PowerVC Cloud Manager

POWER9 POWER8

+

Interoperability with other Cloud Orchestrators

POWER in Public Clouds

Power Systems IBM Cloud Google Cloud Skytap CLOUD vmware vRealize

Shared Processor Pools, Enterprise Pools (2.0)

Traditional IT Infrastructure

- ✓ Secure your data
- ✓ Keep Control and Optimize Costs
- ✓ Drive Traditional & new applications on the private Cloud journey
- ✓ Avoid lock-in, Cloud is just someone else's computer