# IBM Hybrid Multi-Cloud solutions

Dave Taylor
Executive Architect
Software Defined Infrastructure
IBM Systems Group
dltaylor@us.ibm.com

Data Driven Multicloud Storage Architecture

- Enterprises are multi-cloud now…& increasingly so
- Enterprise clients are looking to develop a Data & Cloud strategy for their Infrastructure
- IBM is uniquely positioned to help clients understand their current situation, plan a future state & execute a strategy to get to this future state
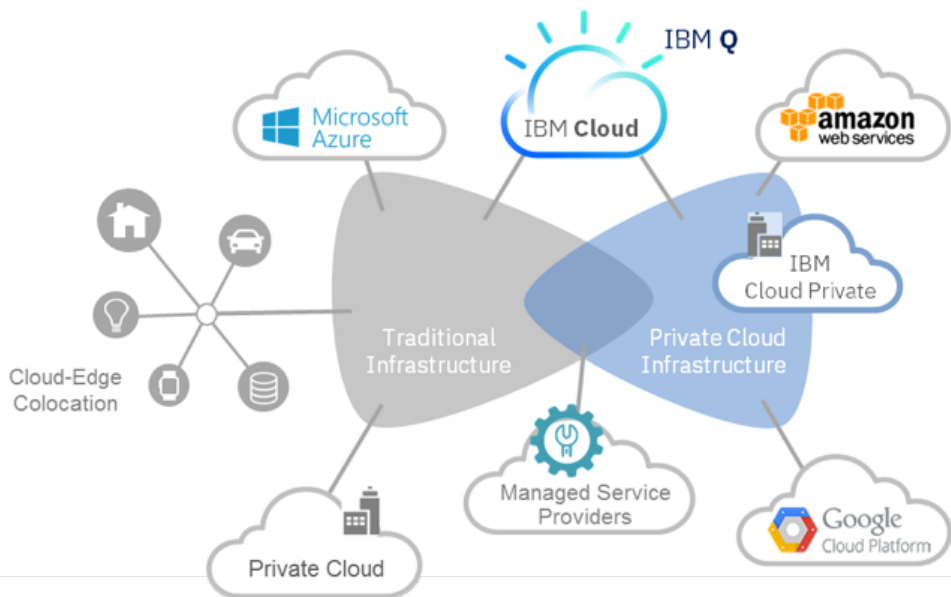
Data Driven Multi-Cloud Architecture is:

Simple
- Data Portability between Private & Public Clouds
- Secure & Compliant
- High ROI Use Cases

Agile
- API Automation
- Native DevOps Capable
- Self Service

Ready for the future
- Service Level Driven
- Software Defined & Flash Optimized
- Modern Backup & Replication

Client Multi-Cloud Patterns

| Where you have …	And you want to …	We offer …
	Modernize traditional workloads Private Clouds for traditional Application infrastructure that are as **agile**, **flexible** and **cost effective** as Public Clouds, that seamlessly extend to leverage Public Cloud Infrastructure as business demands	
	Transform with next-gen application **AI and Big Data infrastructure** to support High Performance Data Analytics and HPC leveraging the power of the Open Source community, supporting the very small to the largest clusters in the world	
	Refactor apps / containerize **Integrated Docker and Kubernetes** Private Clouds for App modernization and agile development with full portability to leverage Public Cloud Infrastructure	

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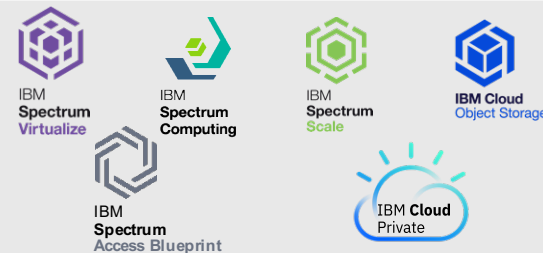
IBM FlashSystem 9100 Multi-Cloud Solutions

Proven solutions to transform infrastructure efficiency

- Select from 3 new IBM FlashSystem 9100 Multi-Cloud Software Solutions
- Deploy rapidly and with confidence based on IBM validated blueprints
- Easily purchased together with FlashSystem 9100
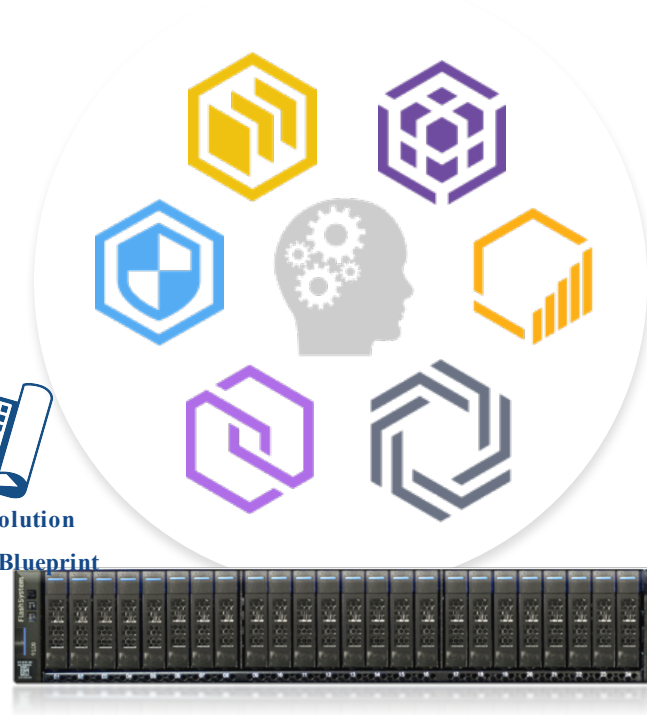
Data Reuse, Protection and Efficiency

Business Continuity and Data Reuse

Private Cloud Flexibility and Agility

- IBM Solution
- Specific Blueprint

IBM Storage Portfolio
Foundation for a Data Driven Multi-Cloud Infrastructure

Software Defined Storage
The foundation for Multi-Cloud & AI workloads

- IBM Spectrum Storage delivers the full suite of software defined capabilities for your data, on-premises or in the cloud; working together to increase flexibility & drive down costs
- Modernize your infrastructure by bringing new capabilities for private & hybrid cloud
- Optimize business-critical analytics & AI workloads

IBM Flash Portfolio
Bringing Flash to new levels of efficiency

- IBM Flash Storage is designed to meet your modern high-performance storage requirements: ultra-low latency, cost-effectiveness, operational efficiency, & mission-critical reliability
- AI assisted, next generation technology for multi-cloud environments

Introducing…
IBM FlashSystem 9100

Data Reuse & Protection
Maintaining the integrity of your data to support ongoing business

- Unlock the full value of your data, reusing data for DevOps, Test Dev, analytics, real time reporting & more
- Modern data protection made easy & cost effective for workloads born in the cloud
- Seamless management of data protection & disaster recovery operations
- Single interface to manage data protection wherever data resides

IBM Flash Systems 9100 with NVMe

- 3 Key Benefits

  1. Performance

  2. Resiliency

  3. Capacity

What can you do with

3X more

Performance

Private Cloud

Create and deploy Machine Learning / Deep Learning apps with PowerAI, Data-Science Experience in minutes and train 4x faster with Power9

Analytics Applications

Get even faster access to valuable analytics driving better business results with an NVMe platform combined with Watson Explorer engines

SAP Databases

- Reduce database recovery time, increase customer engagement, greater employee productivity, faster reporting, and deeper insights. Even with SAP HANA clients need to quickly load & unload the database.

Core Finance Applications

- Get eye-popping response times for client inquiries, frictionless mobile experiences, and increased overall client satisfaction as a result. Reports completed in seconds, not hours or minutes

VDI Environments

- Save time and money, defend against catastrophic failures, improve update speeds, and deliver an easy way to customize desktops for users or groups of users

Health Care Applications

- Reduce check in times and better usage of medical supplies, and test results such as medical information being available to Doctors in seconds not hours or days.

IBM

Complete Peace of Mind with IBM FlashSystem 9100

- **NVMe Future-proof – SCM Capable**

  NVMe end to end today – industry leading performance

  NVMe-oF (FC and Ethernet) support when standard solidifies

- **IBM data reduction guarantee**

  Flexible guarantee: up to 5:1 data reduction

  Express guarantee: 2:1 data reduction

- **IBM availability guarantee**

  IBM guarantees 100% data availability for systems using HyperSwap and deployed by IBM Lab Services

- **IBM controller upgrade program**

  No up-front charges, no contractual commitment to buy

- **7 year 24x7 Support**

  Up to 7 years support available with flash media retention offerings
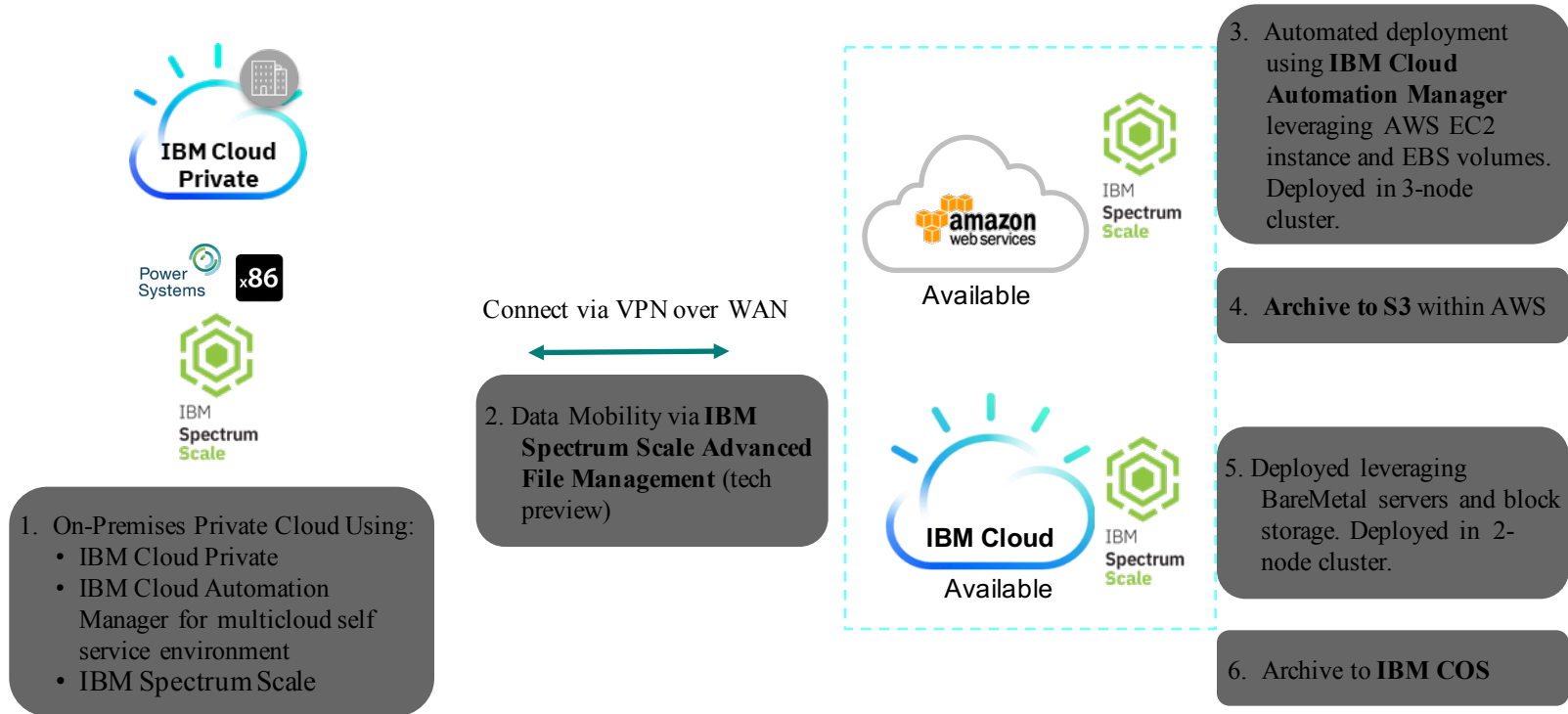
- **Endurance**

  IBM FlashCore Modules will be covered for read/write endurance while you are under warranty or maintenance

- **Migration**

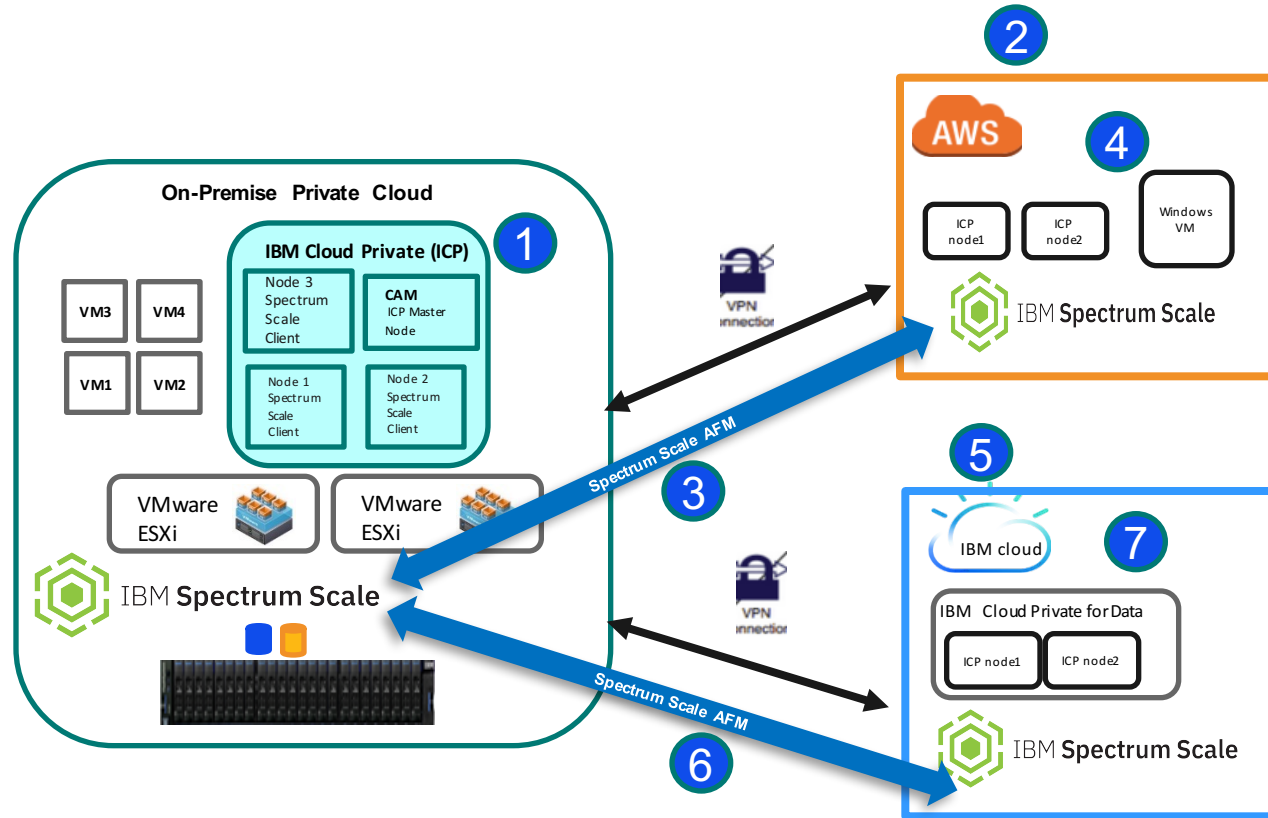 Up to 45 days to migrate data at no extra charge

Peace of Mind Guarantee

Eligible storage systems vary by program terms and conditions specified in guarantee contracts apply

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Hybrid Workflows: Data Agility and Collaboration with IBM Spectrum Scale

IBM Cloud Private

Power Systems | x86

IBM Spectrum Scale

1. On-Premises Private Cloud Using:
   - IBM Cloud Private
   - IBM Cloud Automation Manager for multicloud self service environment
   - IBM Spectrum Scale

Connect via VPN over WAN

2. Data Mobility via **IBM Spectrum Scale Advanced File Management** (tech preview)

amazon web services — **IBM Spectrum Scale**
Available

IBM Cloud — **IBM Spectrum Scale**
Available

3. Automated deployment using **IBM Cloud Automation Manager** leveraging AWS EC2 instance and EBS volumes. Deployed in 3-node cluster.

4. **Archive to S3** within AWS

5. Deployed leveraging BareMetal servers and block storage. Deployed in 2-node cluster.

6. Archive to **IBM COS**

IBM Hybrid Multicloud Solutions – IBM Spectrum Scale

1. On –premise resource Orchestration

2. Automated deployment of IBM Spectrum scale in AWS.

3. Data movement from On-premise to AWS Cloud

4. Business users accessing the data in AWS cloud.

5. Provisioning of the resources in IBM Cloud

6. Data movement from on-premise to the IBM cloud for analytics.

7. Data scientist access the data using IBM Cloud Private for Data.

IBM CAM templates for Hybrid Multi Cloud

IBM Cloud Private - AWS	IBM Spectrum Scale - AWS	IBM Spectrum LSF - AWS
Kubernetes Worker Node	Cluster File Storage	Workload Scheduler
Amazon EC2	Amazon EC2	Amazon EC2

IBM Cloud Private - IBM Cloud	IBM Spectrum Scale - IBM Cloud	IBM Spectrum LSF - IBM Cloud
Kubernetes Worker Node	Cluster File Storage	Workload Scheduler
IBM	IBM	IBM

IBM Cloud Private - Private Cloud	IBM Spectrum Scale - Private Cloud	IBM Spectrum LSF - Private Cloud
Kubernetes Worker Node	Cluster File Storage	Workload Scheduler
VMware vSphere	VMware vSphere	VMware vSphere

Let the IBM Cognitive initiatives drive innovation
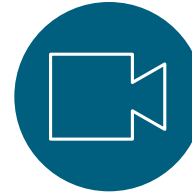
Leverage
IBM enabled solutions to deliver compelling choices that can deploy quickly

Deliver
proven and enabled solutions that produce high client satisfaction

Deploy
optimum, right sized solutions with best practices

Partner
with IBM global sales, partner ecosystem and support to deliver to any opportunity regardless of size

Proven
solutions for Multiple industries and venues

Innovation
is what we help our customers deliver to their business's

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