

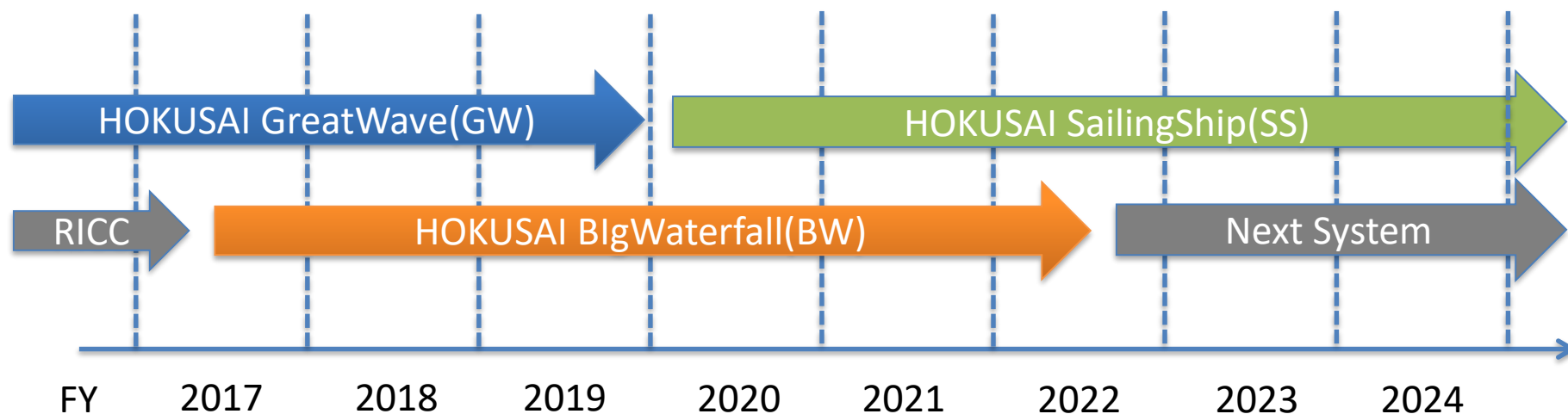
Handout 1

Outline of RIKEN Data Science Infrastructure

Information and Communication Infrastructure Section,
Information Systems Division,
Head Office for Information Systems and Cybersecurity

Operation schedule of shared use computers

- HOKUSAI GreatWave (GW) system started operation in April and will end in March 2020.
 - 1080 nodes, CPU: SPARC64-Xlfx, 2PB
- HOKUSAI BigWaterfall (BW) system started operation in October 2017 and will end in September 2022年.
 - 840 nodes, CPU: Xeon Gold 6148, 5PB
- Data Science Infrastructure HOKUSAI SailingShip(SS) system will start operation in June 2020.
 - 440 nodes, CPU: Xeon Platinum 8260, 30PB



Service interruption at the end of fiscal year and HOKUSAI GreatWave(GW) operation termination

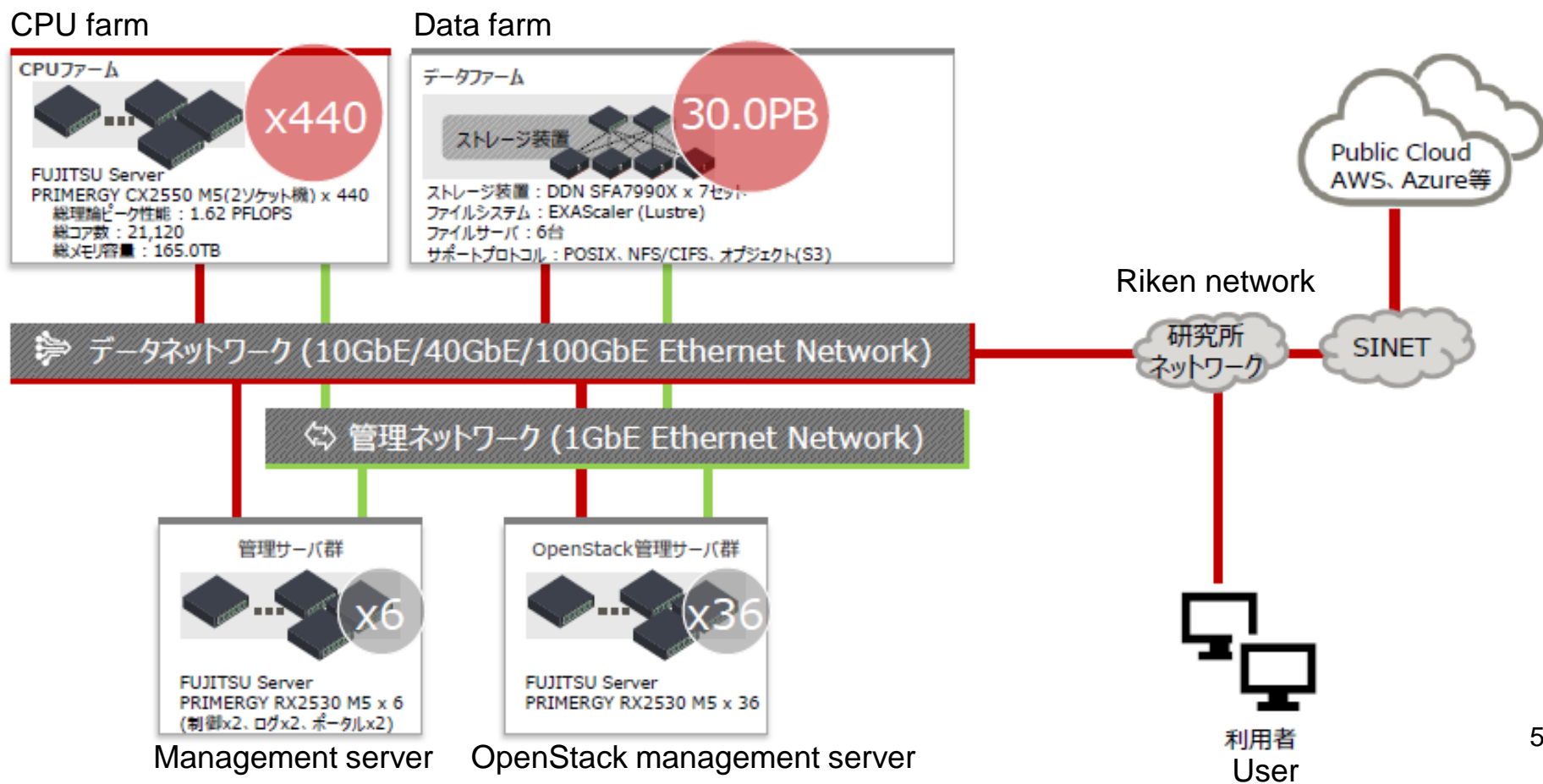
- Service interruption at the end of fiscal year
 - From 5:00 p.m. on March 31 to 1:00 p.m. on April 6
- GW operation termination
 - GW is scheduled to cease operation at the end of March 2020
 - /gwhome, /gwdata and ACSG are unavailable after that time.
 - Please move necessary data to another place beforehand.
 - Hierarchical storage (HSM) and ACSL will continue to operate as part of BigWaterfall
 - Due to configuration changes they will be unavailable from 5:00 p.m. on March 31 to 1:00 p.m. on April 13.

Operation schedule of Data Science Infrastructure HOKUSAI SailingShip(SS)

- Procurement process
 - November 2018 Procurement started (RFI public notice)
 - November 27, 2019 Bid opening→Fujitsu's proposal
- Operation schedule
 - June 2020 Start of test operation
 - November 2020 Start of regular operation
- User meetings
 - October 3, 2019 Introduction of beneficiary pays
 - March 24, 2020 Outlien of SS and usage fees
 - April-May 2020 Test operation guide
 - August-September 2020 Regular operation guide

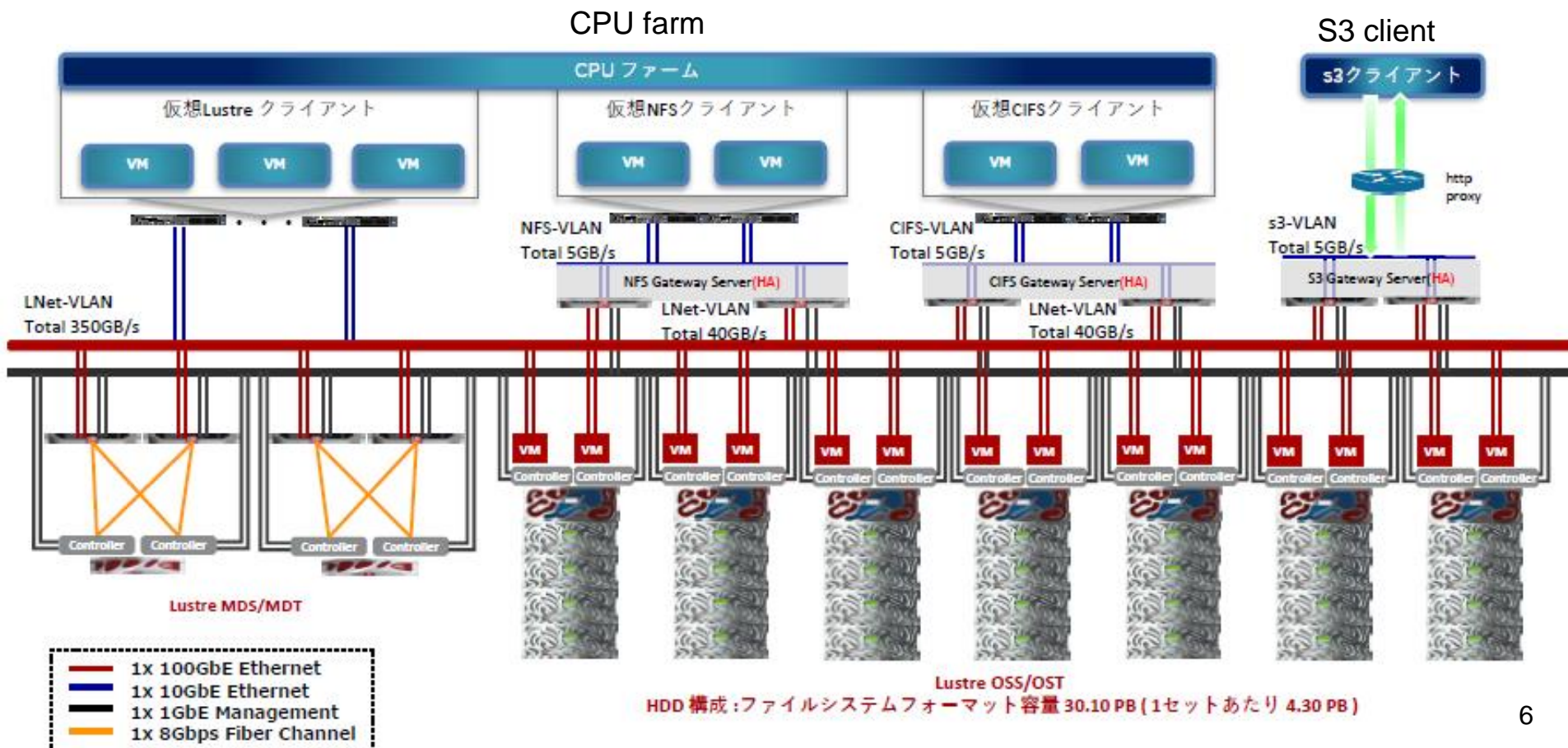
Outline of proposal

- The lease period is from June 1 2020 to May 31 2026
 - Data farm
 - CPU farm
 - PlaaS(Private Infrastructure as a Service)



Data farm

- DDN ES7990X 7 unit
 - 30 PB、EXAScaler(Lustre) filesystem, 350 GB/s
 - NFS/CIFS gateway, URL access gateway 2 node each



CPU farm

- FUJITSU Server PRIMERGY CX2550 M5 440 node
 - Intel Xeon Platinum 8260 (2.40 GHz、24 core)
 - 2 CPU/node、21,120 core、1.62 PFlops
 - 384 GB (DDR4-2933)、SSD 1.92 TB、10GBASE-Tx2

システム全体構成

総理論ピーク性能 (FP)	1.62 PFLOPS (3.68 TFLOPS x 440ノード)
総コア数	21,120コア (48コア x 440)
総メモリ容量	165.0 TB (384GB x 440 / 1024)

PRIMERGY CX2550 M5 [水冷]



PRIMERGY CX400 M4 [水冷]



1台あたりの構成

CPU	プロセッサ	Intel Xeon Platinum 8260(2.4GHz/24コア) ※インテル64アーキテクチャ(x86_64) ※インテルバーチャライゼーション・テクノロジー含む(intel VT)
	プロセッサ数	2プロセッサ
	コア数	48コア(24コア x 2CPU)
	理論ピーク演算性能(FP)	3.6TFLOPS (2.4GHz x 32浮動小数点演算 x 24コア x 2CPU / 1000)
	理論ピーク演算性能(INT)	1.843TINOPS (2.4GHz x 16整数演算 x 24コア x 2CPU / 1000)
主記憶	種別	32GB DDR4 2933MHz RDIMM x 12 (ECC)
	容量	384GB (32GB x 12)
	コア当たりの容量	8GB (384GB / 48コア)
	メモリバンド幅	281GB/s (2933MHz x 8バイト x 12チャネル / 1000)
内蔵ディスク	OSブート用兼仮想環境の起動用	SSD-1.92TB x 1
データアクセスネットワークインターフェース	種別	10GBASE-T x 2ポート
	理論性能	20Gbps(10Gbps x 2ポート)
	接続先	データアクセスネットワーク用スイッチ
管理ネットワークインターフェース	種別	1000BASE-T x 1ポート
	接続先	管理・制御ネットワーク用スイッチ
電源		1600W x 2 (80PLUS PLATINUM)
筐体内監視		iRMC (CPU,メモリ,HDD,カード,ファン,電源,温度,電圧等)

PlaaS(Private Infrastructure as a Service)

- Mirantis Cloud Platform (MCP)
 - Commercial distribution of OpenStack that can provide VM, container and bare metal environment.
 - CPU farm, data farm, and network are virtualized by MCP, and system infrastructure is provided as a tenant for each user.

