h　接続用サーバでは、本システムのファイルシステム領域をＮＦＳエクスポートする機能を有すること。既存のシステム（Oakbridge-CX，Wisteria／BDEC-01，mdx）のログインノード、外部接続ノード等からマウントできること。

i　無停電電源装置から停電の通知を受け取り、30秒以上継続した場合に、並列ファイルシステム、ネットワークスイッチ、管理サーバ群を自動的かつ正常に停止させる機能を提供すること。

C　導入システム全体の消費電力は160kVA以下であること。ＣＰＵ、メモリおよびディスク装置が連続的に稼働し続けた際にも十分な廃熱が行えるよう、電源容量、冷却、設置方式が考慮されること。設置面積は128平方メートル以下であること。

2　資料及びコメントの提供方法　上記１⑵の物品に関する一般的な参考資料及び同⑸の要求要件等に関するコメント並びに提供可能なライブラリーに関する資料等の提供を招請する。

⑴　資料等の提供期限　令和３年５月６日17時00分（郵送の場合は必着のこと。）

⑵　提出先　〒277―0882　千葉県柏市柏の葉６―２―３　東京大学情報システム部情報戦略課会計チーム　志村　正規　電話080―9452―3828

3　説明書の交付　本公表に基づき応募する供給者に対して導入説明書を交付する。

⑴　交付期間　令和３年４月１日から令和３年５月６日まで。

⑵　交付場所　上記２⑵に同じ。

4　説明会の開催　本公表に基づく導入説明会を開催する。

⑴　開催日時　令和３年４月８日15時00分

⑵　開催場所　Zoomによるオンライン説明会

5　その他　この導入計画の詳細は導入説明書による。なお、本公表内容は予定であり、変更することがあり得る。

6　Summary

⑴　Classification of the products to be procured : 14

⑵　Nature and quantity of the products to be purchased : Large-scale Common Storage (1st Generation) 1 Set

⑶　Type of the procurement : Purchase

⑷　Basic requirements of the procurement :

A　“Large-scale Common Storage System (1st Generation)” (hereinafter referred to as “This System”) must satisfy the following specifications for hardware :

a　“This System” consists of “Parallel File System”, “Network Switches”, “Migration Nodes”, “Connection Servers”, “Login Nodes”, “Web Servers for User-Support”, and “Management Servers.”

b　“Parallel File System (PFS)” must be a highly reliable parallel file system with 25 PByte or more capacity for storage. PFS must provide the performance of operations for reading and writing with bandwidth of 100 GB／s or more.

c　“Network Switches” must be the Ethernet switches equipped with the capability of 400 Gbps communication link and RDMA function.

d　Four or more “Migration Nodes” must be provided for high-speed migration of files on the parallel file system of the Oakforest-PACS system operated by Joint Center for Advanced High-Performance Computing (JCAHPC). The Oakforest-PACS system must be connected with “This System” by the communication link of 400 Gbps and more in total via “Migration Nodes.”

e　“Connection Servers,” which make the existing systems (Oakbridge-CX, Wisteria／BDEC-01, and mdx) to be able to access “This System,” must be provided.

f　“Login Nodes” for direct access to “Parallel File System” and “Web Servers for User-Support” must be provided.

g　“Management Servers” must be provided, including “Management Servers for Operation”, “Authentication Servers,” “Storage Servers for Security Logs,” and “Monitoring Servers.”

h　When a power outage continues for 30 seconds and more, the “Uninterruptible Power Supply (UPS)” must maintain power supply until all the devices that make up “Parallel File System,” “Network Switches,” and “Management Servers,” are normally shut down.

B　“Large-scale Common Storage System (1st Generation)” must satisfy the following specifications for software :

a　A Linux operating system must work.

b　Fortran 2003, C and C++ languages must be supported including automatic SIMD vectorization function and OpenMP API (Version 4.0 or higher) on “Login Nodes” and “Migration Nodes.”

c　Python language must be supported on “Login Nodes” and “Migration Nodes.”

d　An MPI3.1 library must be provided on “Login Nodes” and “Migration Nodes.”

e　The Gfarm file system must be available to access on “Login Nodes.”

f　“Parallel File System” must provide the Lustre file system or a file system with equivalent functionality.

g　“Migration Nodes” shall mount both of the Lustre area of Oakforest-PACS and the filesystem area of “This System” simultaneously. The migration of the Lustre area from Oakforest-PACS must be completed by the end of March 2022.

h　“Connection Servers” shall export the file system area of “This System” to NFS. “Connection Servers” shall be mounted from the login nodes, external connection nodes, etc. of the existing systems (Oakbridge-CX, Wisteria／BDEC-01, mdx).

i　A function that automatically and normally stops “Parallel File System,” “Network Switches,” and “Management Servers” must be provided when it receives a notification of power failure from UPS and the power failure continues for 30 seconds or more.

C　Overall maximum power consumption must be 160 kVA or less. The power capacity, cooling facility, and system assembly are required to be carefully designed so that the system is kept cool even if CPU, memory, and disks are fully and continuously operated. The footprint of entire system must be equal to or less than 128 square meters.

⑸　Time limit for the submission of the requested material : 17 : 00　6 May, 2021

⑹　Contact point for the notice : Masaki Shimura, Accounting Team, Information Strategy Group, Information Systems Department, The University of Tokyo, 6―2―3 Kashiwa-no-Ha Kashiwa-shi Chiba 277―0882 Japan, TEL 080―9452―3828