



Chicago Teachers' Pension Fund

Questions and Answers Related to the RFP for

CONVERGED INFRASTRUCTURE

September 12, 2018

1. Which version of VMware are they currently running?

VMware ESXi v6.7 Enterprise Plus.

2. "Redundant Storage arrays"
 - a. What Manufacture & Model Arrays are they currently using?
 - b. What are the current IOPS requirements?
 - c. Is the data broken into 2-tiers (Active & Archive groups)?

- a. EMC VNX 5200.
- b. Exceed current 12.0 KIOPS read/3.1 KIOPS write.
- c. Presently no storage tiering.

3. "End-to-end encryption"
 - a. What is currently being used to encrypt the data?
 - b. AES xxx?
 - c. Certificate based?
 - d. How many hosts need access to the Storage?

- a. No encryption.
- b. Not currently used.
- c. Not currently used.
- d. 4 hosts.

4. What Make/Model switches are used in your core infrastructure?
 - a. How many open/available ports on the proposed switches?
 - b. What is the distance from Switch(s) to the proposed new hardware?
 - c. Same rack?

- a. 8 Gb FC SAN switches to be replaced with 40-port 10 GbE switches.
- b. Within the same equipment cabinet.
- c. 42U data equipment cabinet rather than rack.

5. Please provide a Visio (or similar) of current Switch/Server/Storage configuration. *Mutual NDA may need to be processed 1st.

Forklift upgrade to replace currently installed host, storage, and switch data center assets.

6. What power options are available inside the rack?

208V/30A/3-phase A-B bus.

7. Can you please provide the scoring matrix that CTPF will use to evaluate all RFPs?

Not provided.

8. Can you please provide a topology drawing, or what rack space is available?

36U contiguous rack space is available.

9. In the current Hypervisor environment what applications are running?

VMware ESXi v6.7 Enterprise Plus.
LoB/ERS applications running on Windows and Linux servers.

10. What OS's are supported?

VMware ESXi v6.7 Enterprise Plus.

11. Do you have a Visio of the existing server/VM environment?

Forklift upgrade to replace currently installed host, storage, and switch data center assets.

12. Can you provide a Visio of Network topology that will be integrated with new Converged?

Forklift upgrade to replace currently installed host, storage, and switch data center assets.

13. Are there database applications running and if yes, what is the database topology?

SQL Server.
No database topology.

14. Please provide the number of VMs.

100.

15. Please provide Applications currently in use.

LoB/ERS applications running on Windows and Linux servers.

16. Please provide information on Mail/Database servers?

Migrating to Exchange on-line/SQL.

17. When can migrations be performed? Afterhours, etc.

Anytime.

18. How do you do backups currently?

Forklift upgrade to replace currently installed host, storage, and switch data center assets.

19. Specific to the new SAN and that 60TB – do you want to leverage any type of Snapshots on the SAN for backups? If so please provide retention requirements.

Snapshots will be utilized.
1 month.

20. Will the SAN have any non-block file system requirements, such as CIFS to be supported?

CIFS may be used.

21. Will any systems other than the new servers need to access the SAN – if so what media type is currently in place? (Fiber/iSCSI/NFS/etc.)

No.
Fibre to be discontinued.

22. Will array based replication now, or in the future need to be supported?

Yes.

23. Do any software licenses need to be included as part of the quote, or will existing be used? If existing, please provide type and CPU QTY.

No licensing.

24. How will the new CI switches uplink to the existing network? Media type and length. Are there any specific uplink ports, speeds or redundancy requirements the solution needs designed to?

10GbE, 6 ft.
Redundant ports.

25. Converged server and storage architecture feature. Is a hyper-converged infrastructure an option for consideration?

Hyperconverged options will be considered.

26. Compatibility with VMware ESXi v6.x operating systems feature. Are existing VMWare ESXi host licenses available for all new servers or are new licenses required for any CPU's?

No new licensing is required.

27. Redundant data storage arrays each providing around 60 TB of available effective storage apiece:

- a. Will the redundant storage arrays reside in two separate data centers?
- b. What is the bandwidth and round trip latency between the data centers hosting the storage arrays?
- c. Is synchronous replication of the storage array content required or is asynchronous replication acceptable?
- d. Is there a storage connectivity preference of Fiber Channel or Ethernet?

- a. Redundant storage arrays to be located in the single data center.
- b. 10 GbE LAN bandwidth.
- c. A replication requirement was not specified.
- d. 10 GbE LAN bandwidth.

28. Four servers with each server having the minimum specs of 2-way or 4-way Intel Xeon multi-core CPU's per server, 768GB RAM apiece, and redundant 10GbE or higher speed network interfaces and power supplies.
- a. Assuming a two data center design is intended, are four redundant servers per data center expected?
 - b. What is the minimum number of CPU Cores required, and is there a minimum clock speed needed?
 - c. Does each server cpu proposed require a new virtualization hypervisor license or will existing licenses be provided?
 - d. Are top-of-rack switches for the server connectivity required or will the servers be connected to existing network switches via RJ45 Copper or SFP+ Fiber adaptors?

- a. There is a single data center.
- b. No minimum CPU core specification/no minimum clock speed specification.
- c. No additional licensing required.
- d. Forklift upgrade to replace currently installed host, storage, & switch data center assets.

29. Fault tolerance and health monitoring capabilities: Is an enterprise health monitoring system expected or is storage, server, and network self-monitoring acceptable?

Acceptable.

30. Hardware compression and deduplication features: May the data compression & deduplication be achieved with a combination of hardware and/or software solutions?

Acceptable.

31. Hardware-based end-to-end data encryption for data in use, in flight, and at rest: May the end-to-end data encryption of data in flight, in use, and at rest be achieved with a combination of hardware-based and/or software-based encryption solutions?

Acceptable.

32. VMware certified hardware quoted; Simplified deployment and administration features: Are full automation and orchestration capabilities required or just are simplified day to day operational tasks intended?

Either.

33. 3 to 5-year maintenance and support extended warranty terms: Is Mission Critical Support with 24h x 7d x4h on-site response required or is next business day enough?

NBD is acceptable.

34. Support for ready integration with cloud data upload, backup, recovery, and/or DR services and capabilities:

- a. Is there an existing backup/recovery system that should be leveraged, or is a new backup/recovery system expected in the proposal?
- b. If there is existing solutions will capacity or host based licensing be transferred to the new hardware if applicable?
- c. What are the RPO and RTO requirements? What are the RPO & RTO capabilities today?
- d. Does "cloud data upload for backup" mean that backup as a service (BaaS) is desirable now or an optional plan for the future?
- e. Does "cloud data upload for recovery" mean that disaster recovery as a service (DRaaS) is desirable now or an optional plan for the future?
- f. Does "DR Services and Capabilities" mean that self-managed or fully managed DRaaS or DR on Demand (DRoD) is desirable now or an optional plan for the future?

a. Forklift upgrade to replace currently installed host, storage, & switch data center assets.

b. Licensing not required in RFP.

c1. TBD.

c2. N/A.

d. CTFP had issued a separate DR/backup RFP which is now closed. However, a DR/backup solution can be proposed as a single solution within your response to this RFP. RFP Section VIII(D)(c) asks Respondents to "Describe any deliverables or services, not included in Section III. Scope of Work that your Firm would suggest to be provided in order to provide more complete and thorough services."

e. Same answer as d above.

f. Same answer as d above.

35. Should the solution be housed on-premises at CTPF HQ or hosted in a Data Center facility?

On-premises.

36. If a Data Center, is there a geographic preference? Does CTPF require the solution to be architected on dedicated or multi-tenant infrastructure?

The data center is at the CTPF HQ serving non-multitenant applications.

37. If a hosted model is being considered, does CTPF require the solution to be architected on dedicated or multi-tenant infrastructure? If unsure, we can provide recommendation based on scope.

The data center is on-site and is not hosted or multi-tenant.

38. Will the Operating Systems of the environment need to be managed? If so, which ones?

In-house managed VMware ESXi v6.7 Enterprise Plus.

39. Will any Databases need to be managed? If so, please provide the type of DB and the specific infrastructure requirements for each.

In-house managed databases.

40. Will management of any applications be needed? If so, please provide details of the application and infrastructure requirements for each.

No application management needed.

41. What does your network topology look like?

Redundant FW's/gateways; 10GbE in the data center.

42. What type and speed connectivity do you have into your primary production environment today?

Forklift upgrade to replace currently installed host, storage, and switch data center assets.

43. Do you have any remote users accessing the environment? If so, how many?

Users have access through a VPN gateway that will be replaced this fiscal year.