

## RFP Questions and Clarifications Memorandum

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**To:** Vendors Responding to RFP Number 3856 for the Mississippi Department of Information Technology Services (ITS)

**From:** Craig P. Orgeron, Ph.D.

**Date:** May 17, 2016

**Subject:** Responses to Questions Submitted and Clarifications to Specifications

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RFP Number 3856 is hereby amended as follows:

**1. Section VII, Technical Specifications, Item 6.4 is being modified to read:**

**“MANDATORY** - Storage must be reconfigurable among environments. Vendor must include the cost for sixteen (16) FICON Host Adapters and eight (8) Fiber Channel Adaptors, in Section VIII Cost Information Submission. ~~ITS prefers 16GB host adapters for future growth.~~ **At a minimum, Vendor’s proposal should be 16GB up to the maximum GB of the capabilities for both FICON Host Adapters and Fiber Channel Adapters for future growth.**”

**2. Section VII, Technical Specifications, Item 6.5 is being modified to read:**

**“MANDATORY** - The solution must allow for flexible drive options including high performance flash. **Proposed drives must be hardware encryption capable.** The Vendor should **describe in detail their proposed** drive options.”

**3. Section VII, Technical Specifications, Item 6.6 is being modified to read:**

**“MANDATORY** - Proposed solution must support RAID-5, RAID-6, and RAID-10. **Vendors may propose a comparable solution to RAID-10, however, Vendors must explain how the proposed solution’s performance and recoverability is comparable to RAID-10.**”

**4. Section VII, Technical Specifications, Item 6.9 is being modified to read:**

**“MANDATORY** - The proposed solution must support PAV, HyperPAV, Multiple Allegiance, zHPF, ~~z/OS Distributed Data Backup~~, MIDAW Facility and all zSeries

integration functions. Since both z/OS and z/VM will support PAVs, the Vendor should include the cost to purchase ~~80TB~~ **85TB** of PAV capacity. Vendor must provide details on the incremental options proposed for purchasing PAV capacity and any other z/Series integration function."

**5. Section VII, Technical Specifications, Item 6.9.1 is being added and will read:**

**"The proposed solution must support z/OS Distributed Data Backup or equivalent functionality. Vendor must describe in detail how their proposed solution will support z/OS Distributed Data Backup or equivalent functionality."**

**6. Section VII, Technical Specifications, Item 10.1 is being modified to read:**

"Vendors must state the warranty period for each item proposed, during which time maintenance need not be paid. Warranty must include at a minimum parts and labor. **ITS desires five years of warranty/maintenance coverage.**"

**7. Section VII, Technical Specifications, Item 10.3 is being modified to read:**

"If warranty period is less than ~~four~~ **five** years, Vendor must provide pricing **proposal** to **up-lift or** extend, ~~or propose~~ post-warranty maintenance ~~to extend maintenance to four~~ **five** years for each item proposed."

**8. Section VII, Technical Specifications, Item 10.7 is being deleted:**

~~"Vendor must indicate whether warranty service is available past the three years for each item proposed and include the annual cost, if any, and period of extension. If unavailable, Vendor may propose on-site, 24x7 post-warranty maintenance for years four and five for ITS' consideration."~~

**9. Section VIII, *Cost Information Submission* has been revised and is attached to this Memorandum. Vendors must submit the Revised Cost Information Submission with their proposal response.**

Vendor must include in their proposal a response to each amended requirement as listed above. Vendor must respond using the same terminology as provided in the original requirements.

The following questions were submitted to ITS and are being presented as they were submitted, except to remove any reference to a specific vendor. This information should assist you in formulating your response.

**Question 1:** Section IV, Item 35, pg. 21

Concerning risk factors, please advise if any updates to the RFP or Purchase Agreement are anticipated to employ any risk mitigation mechanisms such as those summarized in this section.

**Response:** **None anticipated.**

**Question 2:** 6.2 MANDATORY - The disk subsystem must support all platforms stated in Items 3.2 and 3.3, General Overview and Background, and attach as described.

Vendor must provide any and all hardware, software, or right-to-use requirements for attaching any of these platforms.

What vendor and release of zLinux are you running?

**Response:** **z/VM 6.3 and SUSE Linux 11.3 and 11.4.**

**Question 3:** 6.2 MANDATORY - The disk subsystem must support all platforms stated in Items 3.2 and 3.3, General Overview and Background, and attach as described. Vendor must provide any and all hardware, software, or right-to-use requirements for attaching any of these platforms.

Is there any reason why the DS8800 and DS8300s are on a separate physical platform?

**Response:** **Funds were provided by different agencies with different funding mechanisms.**

**Question 4:** 6.2 MANDATORY - The disk subsystem must support all platforms stated in Items 3.2 and 3.3, General Overview and Background, and attach as described. Vendor must provide any and all hardware, software, or right-to-use requirements for attaching any of these platforms.

If a replacement to the IBM DS8800 is proposed, can the DS8800 and DS8300 be converged into a single platform/solution?

**Response:** **Yes, pending agreement from the partner agency.**

**Question 5:** 6.3 MANDATORY - Vendor must propose 25 TB of usable space in the primary data center and 60TB of usable space in the remote data center that will initially be allocated as CKD mainframe disk space.

Is the capacity requirement at the remote data center due to the technology of the IBM solution?

**Response:** **The capacity requirements was the best guess by ITS staff for replication of production data and the desire to have a “test area” for some in-house D/R testing. Our intent is to replicate both z114 and EC12 production data to the remote site. Competing Vendors may have other options that will be acceptable. Some understanding of storage architecture may indeed lean toward IBM’s products simply because of the lack of marketing efforts of some competitors. This is an RFP process and all solutions proposed will be evaluated.**

**Question 6:** 6.3 MANDATORY - Vendor must propose 25 TB of usable space in the primary data center and 60TB of usable space in the remote data center that will initially be allocated as CKD mainframe disk space.

Should a vendor be able to reduce the capacity requirements at the DR Site due to intelligent software that reduces the space requirements, can a lesser capacity at the remote data center be proposed?

**Response:** **Refer to the Response to Question Number 5.**

**Question 7:** 6.3 MANDATORY - Vendor must propose 25 TB of usable space in the primary data center and 60TB of usable space in the remote data center that will initially be allocated as CKD mainframe disk space.  
Please provide further details around the requirement for CLONES and DR Testing.

**Response:** The remote platform will have replicated data. ITS would like to copy this replicated data to be used for D/R testing in the remote location whether from a processor located at the remote site or a separate LPAR in the main data center.

**Question 8:** Section VII, Item 6.3, pg. 33  
For the 25TB usable and 60TB usable, what RAID (5, 6, 10) should be applied to achieve those usable capacities and what layout within the RAID format (5+1+1 for example)?

**Response:** RAID 5 with the best suggested layout for RAID 5. Most of the present storage is RAID 5 (6+Parity+Spare).

**Question 9:** Section VII, Item 6.3, pg. 33  
We request additional information to accurately size the storage array being proposed for ITS. Please provide the information (SMF records) requested in the attached documents.

**Response:** SMF/RMF data is available and has been or will be sent on request.

**Question 10:** Is the secondary site a hot standby site complete with its own mainframe or is it to be used as data backup / data recovery site to restore any data as needed? (RFP Page 33, section 6.3)

**Response:** Initially, the secondary site is a data backup/data recovery site. This acquisition is a step in building a hot standby solution. There is no mainframe yet, but steps are being taken to build a complete D/R environment.

**Question 11:** Should both FC and FICON host adapters be 16Gb? (RFP Page 33, section 6.4)

**Response:** Refer to Clarification Number 1 in this Memorandum.

**Question 12:** 6.6 MANDATORY - Proposed solution must support RAID-5, RAID-6, and RAID-10.  
Please provide further details on the RAID 10 Requirement.

**Response:** Refer to Clarification Number 3 in this Memorandum.

**Question 13:** 6.6 MANDATORY - Proposed solution must support RAID-5, RAID-6, and RAID-10.  
Should the technology proposed allow for stripping across the disk pool, and thus eliminate the need for RAID 10, can we assume RAID 10 in that scenario not a requirement?

**Response:** Refer to the Response to Question Number 12.

**Question 14:** 6.8 MANDATORY - If the Vendor proposes a system other than the referenced model disk sub-system (IBM DS8886), Vendor must substantiate that the performance of the proposed system is equal to or greater than that of the referenced model (IBM DS8886). This detail must include information pertaining to performance comparison tests. ITS will provide SMF/RMF and/or readily available performance data for performance evaluation, if requested within 10 days after RFP release.  
Please expand on 'performance comparison' tests required.

**Response:** Basically what ITS is asking is that a storage system be comparable to a DS8886 as a reference platform and is a fully supported offering that exceeds the performance of the existing infrastructure. ITS understands that performance depends on the configuration of components. Because Vendor solutions differ in architecture, ITS does not try to specify cache, number of processors, or any other component etc. Most Vendors should have performance related documentation comparing proposed solutions to competitor offerings and that information can be included in the response. This is an RFP process. ITS will evaluate each response and the intention is to be evaluating substantially equivalent technologies. ITS is not expecting a new, sophisticated performance analysis against competitors to be completed. ITS needs to ensure that Vendor's are proposing technology that directly compete with the reference platform and that the offering can grow as needed.

**Question 15:** In order to meet the stated performance requirements will you please send us the current disk array group and cache configurations in the IBM DS8300s and DS8800? (RFP Page 33, section 6.8)

**Response:** The IBM DS8300 at Eastwood has a cache configuration of 128GB and a total of 82 disk arrays. The DS8300 at REL has a cache configuration of 32GB and a total of 48 disk arrays. See Attachments A and B attached to this Memorandum.

**Question 16:** The z/VM landscape is (2) z/VM LPARs on the DS8300 and (6) z/VM LPARs on the DS8800. The z/VM data that we have is two charts. One showing a peak of 375 IOPS and the other with a peak of 850 IOPS. We need to know which processor these workloads are running on. Do the charts depict all of the z/VM LPARS running on that processor or just one?

**Response:** Two z/VM LPARs run on the z114 (one is production and one is test). The DS8300 (VF611) is the main storage for the z114 (F3E7) and is connected only to the z114. The primary application on the z/VM-zLinux is an Informix database. The other DS8300 (FX981) is in a remote location, but connected by FICON within the 10km limit. This DS8300 (XK341) is primarily used by the z114 but is also shared with the EC12 (B816). Only select volumes on this remote DS8300 are actually online to the EC12.

Six z/VM LPARs run on the EC12 (B816). The EC12 z/VM systems run mostly SAP applications using DB2 on the z/OS systems as the database server.

Most data is passed from the DB2 systems to the application servers through hipersockets. Most of the IOPS would be observed from the DB2 LPARs and not the z/VM LPARs. The primary storage system for the EC12 is the DS8800 (XK341) and is connected only to the EC12. Again, the remote DS8300 (FX981) is shared, but use by the EC12 is limited at this time.

**Question 17:** Do you have any performance reports that would provide some indication of the workload being seen from z/VM? Items such as IOPS, response time, cache hit ratio, read to write ratios would be helpful.

**Response:** ITS utilizes the Velocity monitor for z/VM. The staff has created a sampling of the data that has been or will be sent on request. However, since the application on z/VM-zLinux on the z114 (F3E7) has been implemented, but has not reached its planned capacity and the z/OS on the SAP system (B816) does the majority of the IOPS on the DS8800, we do not think information beyond that reported by RMF is extremely significant.

**Question 18:** From the RMF data I see there are three IBM subsystems. From the EC12 I have:

PROC	Vendor	Serial#	P1	P2	P3	P4	P5	P6	P7	P8
B816	IBM	00000000XK341	30	31	32	33	34	35	36	37
B816	IBM	00000000FX981	50	51						

And from the z114 I have:

PROC	Vendor	Serial#	P1	P2	P3	P4	P5	P6	P7	P8
F3E7	IBM	00000000VF611	70	71	72	34	73	74		
F3E7	IBM	00000000FX981	50	52	83					

Can we get the team to identify what IBM boxes those serial numbers belong to? With both of the processors cabled to a common IBM DASD frame, one would assume that both are in the same location.

**Response:** Refer to the Response to Question Number 16.

**Question 19:** Is it possible that we could get some type of diagram that shows their environment?

**Response:** The Z114 (F3E7) is connected to the DS8300 (VF611) with 6 local Ficon channels and the DS8300(FX981) with 3 Ficon channels over state owned fiber within 10Km (This DS8300 is shared). The EC12 (B816) is connected to the DS8800 (XK341) with 8 local Ficon channels and the DS8300(FX981) with 2 Ficon channels over state owned fiber within 10Km (This DS8300 is shared).

**Question 20:** 6.9 MANDATORY - The proposed solution must support PAV, HyperPAV, Multiple Allegiance, zHPF, z/OS Distributed Data Backup, MIDAW Facility and all zSeries integration functions. Since both z/OS and z/VM will support PAVs, the Vendor should include the cost to purchase 80TB of PAV capacity. Vendor must

provide details on the incremental options proposed for purchasing PAV capacity and any other z/Series integration function.  
Please provide further details on the '80TB' of PAV capacity. Why '80TB's' as the selected capacity requirement?

**Response:** 25 TB at the primary location and 60 TB at the remote location include growth at the primary location and also growth at the remote location by incorporating DS8800 replication. Refer to Clarification Numbers 4 and 5 in this Memorandum.

**Question 21:** Is the z/OS Distributed Data Backup in use today? (RFP page 33, section 6.9)

**Response:** No, z/OS Distributed Data Backup is installed on current hardware but ITS plans to use it in the future. Refer to Clarification Numbers 4 and 5 in this Memorandum.

**Question 22:** Are storage pools (thin provisioning) to be used immediately in either or both of the storage systems? (RFP Page 33, section 6.11)

**Response:** ITS would like the ability to see all of their options, therefore Vendors should provide this with their proposal response.

**Question 23:** Is automatic tiering to be used in either or both of the storage systems requiring multiple drive type tiers in the response? (RFP Page 33, section 6.11)

**Response:** ITS would like the ability to see all of their options, therefore Vendors should provide this with their proposal response.

**Question 24:** Section VII, Item 6.14, pg. 34

Should the proposed upgrade path include pricing and what capacities should the upgrade path be able to accommodate?

**Response:** Yes, the proposed upgrade path should include pricing. Vendor must propose their best incremental pricing up to maximum capacity to accommodate growth in the future.

**Question 25:** Section VII, Item 6.16, pg. 34

Will the existing DS8800 be replicating data to the secondary site, and if so, will services be required from Vendor to implement the replication?

**Response:** Yes, unless Vendor proposes alternative platforms and/or products. Initial implementation services should be proposed.

**Question 26:** What is the distance between the primary and secondary replication sites? (RFP Page 34, section 6.16)

**Response:** Approximately 5 miles. It is on the edge of the 10km FICON limit, but is working with FICON today without problems.

**Question 27:** 6.17 Vendor must describe/state if they are proposing as part of the overall solution to keep or replace the existing IBM DS8800 hardware, software, and total

current capacity as stated in Item 3.4.2. Performance of proposed overall solution must exceed the current IBM DS8300 and IBM DS8800 environments. Vendor must provide documented benchmark performance metrics of their solution compared to comparable storage systems. ITS will consider replacing the IBM DS8800 capacity as part of the proposed primary storage unit. Would ITS consider an Eval or Proof Of Concept inclusive of performance testing?

**Response:** Refer to the Response to Question Number 14. ITS does not think this is necessary. ITS may require a presentation from the Vendors to insure that all specifications are being met.

**Question 28:** 6.17 Vendor must describe/state if they are proposing as part of the overall solution to keep or replace the existing IBM DS8800 hardware, software, and total current capacity as stated in Item 3.4.2. Performance of proposed overall solution must exceed the current IBM DS8300 and IBM DS8800 environments. Vendor must provide documented benchmark performance metrics of their solution compared to comparable storage systems. ITS will consider replacing the IBM DS8800 capacity as part of the proposed primary storage unit. What growth, if any, should be taken into consideration?

**Response:** Growth has been considered for the replacement needs. If the DS8800 is in the scenario, then 30% initial growth should be taken into consideration.

**Question 29:** Section VII, Item 7.6, pg. 35  
For the migration of count key data (CKD), please provide the total TBs of z/OS data for each DS8300 along with the total TBs of z/VM data for each DS8300 to be migrated.

**Response:** There is approximately 15TB of CKD data on the DS8300s to migrate. If the DS8800 is included in the proposal to be replaced, then 76TB of CKD data will have to be moved.

**Question 30:** Section VII, Item 7.6, pg. 35  
Does ITS have any zLinux Fixed Block (FB) data to be migrated? If so, please provide the number of TBs, number of guests and number of LUNS on each DS8300.

**Response:** ITS has used fixed block data for zLinux. However, for D/R purposes all FB data has been migrated to CKD. There are no Fixed Block zLinux data to be migrated from the DS8300. If the proposal includes the replacement of the DS8800, approximately 80 TB of SAN fixed block storage will have to be migrated.

**Question 31:** Section VII, Item 7.6, pg. 35  
Does ITS own a license for FDRPAS, FDRPASVM, and/or TDMF migration utility?

**Response:** Yes, ITS has a license for FDRPAS. If FDRPASVM and /or TDMF migration utility is necessary, please provide usage cost in services proposal. Vendor should also propose line item pricing for purchase and/or rental of FDRPASVM and TDMF migration utility.



**Question 32:** Section VII, Item 7.6, pg. 35

Is there a network set up between the primary and secondary sites for replication?

**Response:** Yes and there is also dark fiber, if necessary.

**Question 33:** Section VII, Item 7.6, pg. 35

ITS is asking for an hourly rate with total hours for the services, yet the Purchase Agreement asks for a total solution price. Please clarify if ITS wants the services to be estimated hours with an hourly rate or fixed price.

**Response:** Refer to Clarification Number 9 in this Memorandum. Total price will be determined once the evaluation has been completed. Vendor must provide pricing as requested in Section VIII, *Revised Cost Information Submission* on services needed for implementation and installation.

**Question 34:** There are seemingly contradicting requirements for the length of the warranty period. On page 37 of the RFP, section 10.3 requests a four year warranty. Also on page 37 of the RFP but in section 10.7 a three year warranty is implied. Which warranty length is required for the RFP? (RFP Page 37, section 10.3 and 10.7)

**Response:** ITS desires five years of warranty/maintenance coverage. Refer to Clarification Numbers 6, 7, and 8 in this Memorandum.

**Question 35:** The technical specifications do not request encryption. However, on page 41, there is a line item in the pricing for software-based encryption costs. Can you describe your encryption requirements? (RFP Page 41, section VIII COST INFORMATION SUBMISSION under Software under Subtotal Licenses)

**Response:** Refer to Clarification Numbers 2 and 9 in this Memorandum.

**Question 36:** Exhibit A, 1.1, pg. 48

Article 1 Term of Agreement states all tasks under this Agreement are to be completed by August 15, 2016. Section 7.8 on page 36 states that all tasks must be completed within (90) days of contract signature. Please clarify the required completion timeframe.

**Response:** Installation and implementation of proposed solution must be operational and invoiced by August 15, 2016. Data migration, training, and/or replication services must be completed by agreed upon date during contract negotiations.

RFP responses are due May 26, 2016, at 3:00 p.m. (Central Time).

If you have any questions concerning the information above or if we can be of further assistance, please contact Chris Grimmer at 601-432-8208 or via email at [chris.grimmer@its.ms.gov](mailto:chris.grimmer@its.ms.gov).

**Enclosure:** Section VIII, Revised Cost Information Submission

**Attachments:** Attachment A: DS8300 Eastwood Arrays LM  
Attachment B: DS8300 REL Array LM

cc: ITS Project File Number 40732