

Central Bank of The Bahamas
Response To Vendor Questions Regarding RFP
IT2019009: IT Server and Virtualization Refresh

1. How many virtual machines to be replicated to the DR?
Answer: *The Bank anticipates that there will be less than 40 virtual servers that will require replication to the DR.*
2. Do you require fibre switches and routers at the DR site?
Answer: *Vendors must include fibre switches and routers (if also required), at the secondary datacentre.*
3. Do you require storage level replication?
Answer: *Yes.*
4. How do you want the storage for both sites replicated, over FCIP or just IP?
Answer: *Vendors may propose either solution and provide rationale in their proposal submission. Additionally, vendors must indicate the required bandwidth needed for replication between the two datacentres.*
5. Do you require two (2) top of the rack 48 port switches at DR?
Answer: *Yes.*
6. It is mentioned that "All storage network connections are to be 10Gb Ethernet and minimum 25Gb Fibre". Does the storage have to support both 10Gb Ethernet and 25Gb Fibre?
Answer:
 - a. Note: that Fibre Channel has 16Gb and 32Gb, but no 25Gb or 100Gb. How much capacity required for the DR?
Answer: *The vendor should provide the best match to the requirements as defined.*
7. Do you want deduplication and compression at DR site?
Answer: *Yes.*
8. Is 60TB includes VDI storage requirements?
Answer: *Yes. However, it is expected that the selected vendor will validate the Bank's requirements and, where necessary, make further recommendations to meet or exceed the project requirements.*
9. Do you want 10GB Copper or Fibre for Ethernet Connection
Answer: *Fibre is the preferred transport medium*
10. Can a bidder's proposal include 2 complete solution options for consideration?
Answer: *Yes. However, vendors proposing more than one solution must outline the same in the Executive Summary, Proposed Solution, and Implementation Approach sections of their response document. Additionally, two cost proposals, clearly labeled, e.g. primary and alternate or option 1 and option 2, must be submitted separately.*
11. Are the Bank's VMware vSphere licenses up to date and supported? If not, are new licenses required as a part of this proposal?
Answer: *Yes; Account 115135111 and Contract ID 40141344*
12. For thin client provisioning, does the Bank prefer wired or wireless options or a combination of the two? If a combination, please specify quantities of wired and wireless
Answer: *The solution should support wired and wireless connectivity options for all VDI clients.*
13. What is the version of your VMware infrastructure?
Answer: *Version 5.5.*
14. What VMware products do you have installed and/or licensed?
Answer: *vSphere 5.5 and Site Recovery Manager.*
15. What type of licenses do you have? (Enterprise, Standard, Advanced, Etc.)
Answer: *We are currently licensed for vSphere 6 Enterprise, vCentre Server Standard and Site Recovery Manager Standard.*

Central Bank of The Bahamas
Response To Vendor Questions Regarding RFP
IT2019009: IT Server and Virtualization Refresh

16. What type of platforms are integrated to VMware and which version (monitoring tools, backup solutions, threat management, etc. to check compatibility)?
Answer: *We currently use Solarwinds and Site24x7 for monitoring.*
17. What are the business drivers for types of disk in future purchase?
Answer: *The businesses wishes to adopt solutions that can be considered more ecofriendly or "green". These considerations should translate into reduce operational cost and break-fix or replace.*
18. In point 4.3.1, server requirements section the RAM requirements is per host or in total?
Answer: *Per host.*
19. What exact category of cabling should be supply?
Answer: *Copper (Cat7 but at minimum CAT 6A Fibre). There is no specific fibre requirement, singlemode or multimode is acceptable.*
20. Do you plan to support all main site infrastructure on DR site? If not, what are the services do you want to replicate in DR site.
Answer: *Initially, we do not intend to support all main site data at DR, only the critical workloads will be replicated which will amount to less than 40 host.*
21. Can we have the VM and host inventory for your current VMware infrastructure.
Answer:
22. Do you plan to migrate the current infrastructure to the new environment or has to be included in this proposal?
Answer: *See RFP page 23. Vendor will be responsible for migrating servers and storage to the new environment.*
23. Do you plan to migrate other non-VMware platforms to this new solution (Oracle, Bare Metal, etc.)?
Answer: *No.*
24. Is Oracle virtualized or hosted on physical machines?
Answer: *Virtualized*
25. Do you want an HCI solution?
Answer: *This was not specifically requested, however, vendors are encouraged to make representation in their proposals solutions that will best allow the Bank to achieve its objective.*
26. Do you plan to re-purpose your actual infrastructure or it will be deprecated?
Answer: *No.*
27. Do you plan to store information and profiles in the VD (Virtual Desktop) or in an external file server?
Answer: *Either option is a consideration. The vendor should suggest the approach that best addresses performance, availability and security.*
28. What is the expected growth percentage in the next 5 years?
Answer:
29. What are the minimum technical requirements for the VD (vCPU, RAM and Storage)?
Answer: *15*
30. How many rack free space (U) do you have for the new solution?
Answer: *There is no limitation on rack space for the proposed solution.*
31. Is 2U the maximum form factor for each solution component?
Answer: *No.*
32. What type of physical or virtualized network components do you to monitor?
Answer: *Physical resources utilization, system and service availability is monitored for the physical and virtual environment.*
33. Do you plan to access the virtual desktops through internet or only in your LAN?

Central Bank of The Bahamas
Response To Vendor Questions Regarding RFP
IT2019009: IT Server and Virtualization Refresh

Answer: Both.

34. Do you have any special configurations on your VMs? (e.g., always on cluster)

Answer: No

35. Do you have any preferred brand for the physical components?

Answer: No.

36. What is the existing infrastructure such as hardware?

Answer: See RFP, Section 4.2, Page 17.

37. Can the Bank specify which critical workloads are available in DR?

Answer: Active Directory, SWIFT, RTGS, MIMICS, 2FA, Exchange

38. How much manpower is dedicated for the management of the Bank's server infrastructure?

Answer: The Bank has a staff of six (6) Administrators to manage the Bank's infrastructure.

39. Can the Bank provide an RVTools report? This will provide a clear picture of the Bank's VMware environment including versions of various components that make up the environment.

Answer: Due to the sensitive nature of the Bank's business, it will only provide this output to the selected bidder, if necessary. However, please note the summary information below:

- See responses to Questions 11, 13, 14 and 15 regarding the Bank's versions and licensing.
- The Bank has 112 virtualized servers, hosted on seven (7) Blade servers, at the production datacentre
- The Bank has 60 virtualized servers, hosted on five (5) Blade servers, at the secondary datacentre. NOTE: This count includes replicated servers in Site Recovery Manager for disaster recovery.

40. Please provide the version of the Bank's existing databases (i.e. Oracle, MySQL, Microsoft SQL).

Answer: Due to the sensitive nature of the Bank's business, it will only provide this information to the selected bidder, if necessary, to assist with their solution validation.

41. Is the Bank open to consider a VSAN solution instead of a server + SAN configuration, provided that it can meet/exceed any related requirements such as integration with other systems, certifications, and more?

Answer: Vendors may provide solutions deemed necessary to achieve the Bank's stated goals.

42. Is the successful bidder expected to provide Windows Server and VMware licenses? Or does the Bank intend on using its existing licenses? If the latter, can the Bank provide the version of these licenses along with their respective support/maintenance renewal dates?

Answer: No. The Bank will be responsible for all licenses based on the selected bidder's recommendations. See responses to Questions 11, 13, 14 and 15.

43. Is the Bank open to licensing model that is usage-based (consumption model/opex) instead of perpetual/capex? Is there a preference between Opex and Capex for the Bank?

Answer: The Bank does not have a preference. However, bidders are invited to provide both options if proposing an OpEx acquisition model.

44. "Based on the recent trends, Hyperconverged Infrastructure (HCI) is a viable option for many mission-critical workloads; would the Bank consider a hyperconverged solution, and if so can it be a separate option in our proposal (option "traditional infrastructure" and option "hyperconverged infrastructure")?

HCI has become one of the biggest market trends in all of IT the last 2-3 years. HCI offers a compelling solution for complex IT environments, and several of our clients that were adopters of the technology have realized significant advantages, streamlined operations, great performance, and cost savings.

Central Bank of The Bahamas
Response To Vendor Questions Regarding RFP
IT2019009: IT Server and Virtualization Refresh

As Gartner confirms with the latest Magic Quadrant, it is more than capable of supporting demanding mission-critical applications, beyond just traditional desktop virtualization or database workloads."

Answer: *The vendor may propose the solution that it believes will best achieve the Bank objectives.*

45. The RFP indicates Veeam and Spectrum Protect snapshot integration. Spectrum Protect is an IBM solution, is it a requirement for the new solution to be specifically IBM hardware? Or is this integration only intended to accommodate any existing IBM SAN equipment that may be currently in place?

Answer: *Both products are technology agnostic and are not specific to IBM hardware.*

46. Please elaborate on the requirement "SAN should include a chargeback reporting option"?

Answer: *As part of its modernization agenda, the Bank envisages to progression to a private cloud where it will share some services with its local sister regulators, namely the Securities and Insurance Commission. As these plans are in the infant stages, this feature is not mandatory.*

47. Does the Bank have a preferred methodology for VDI access? What percentage of users are mobile? Does the Bank have a preferred hardware standard for thin clients? Will a refresh of devices (mouse, keyboard, monitors) be required? Are there any multi monitor requirements? What are the printing requirements? Can you provide a list of printer device types? Backups?

Answer: *The Bank does not have a preferred methodology for VDI access. As this solution will provide not only remote access but also desktop availability in the event of a disaster, 100% of users may be mobile. The Bank does not have a preferred hardware standard for thin clients; however, it is expected the solution will work with the Bank's thick clients. A requirement to refresh devices is unknown at this time. There is a requirement to support multiple monitors and network printing (IP-based). The Bank currently utilizes Canon and HP printing devices; however, the Bank will tender shortly to replace its existing printing solution which may result in changes in hardware vendor. The solution should factor in that the thin clients should support both wired and wireless connectivity.*

48. What is the Bank's current power, cooling capacity in the install location of the IT infrastructure? How much of the capacity is currently being consumed and how much expansion is possible based on current power and cooling constraints? (please include specific number and capacity of generators/ UPS systems/ cooling systems/ HVAC in general).

Answer: *The proposed solution will replace the Bank's existing server, storage and virtualization with a smaller footprint. As such, the Bank anticipates that it has sufficient power and cooling for the proposed solution. Additionally, if upgrades are determined following solution validation with the selected bidder, the Bank will affect the necessary changes in tandem with the execution of this project.*

49. Please provide a listing of all connectivity from the primary datacentre, secondary datacentre (if available) and all branches that need to communicate with systems that reside on the current IT infrastructure (please list all ISP connections, internet, WAN, MPLS, along with their bandwidth)

Answer: *There are connections linking the DR and BCP sites to the Head Office location. These uplinks are via the two ISP's and include direct internet and local loop/MPLS.*

50. Has there been a Business Impact Assessment (BIA) performed for the workloads residing on the current IT infrastructure or is the vendor that is chosen expected to also perform the BIA in order to prioritize workloads that will require to failover to the secondary site?

Answer: *Yes. The Bank regularly reviews its business continuity plan and by extension performs a BIA. The last review was in 2018.*

Central Bank of The Bahamas
Response To Vendor Questions Regarding RFP
IT2019009: IT Server and Virtualization Refresh

51. Does the Bank have any workloads that should be available 24x7x365 in an active-active configuration between the primary and secondary site? If no, please expand on the recovery times that are acceptable for end users of the systems?

Answer: *Yes. The Bank currently operates two web submissions systems that require 24x7 access and several other critical applications, namely SWIFT, RTGS and Mimics, that require minimal downtime. The Bank will share with the selected bidder recovery time and point requirements for its critical applications which may then be used for further refine the solution.*

52. How does the Bank currently handle the creation and management of internal and external DNS zones and records for centralBankbahamas.com, as this will affect the design of the single-site or dual-site environment? Is automatic failover between two datacentres required for any of the workloads that will reside on the Bank's new IT environment?

Answer: *The Bank manages both its internal and external DNS zones and records – internally via DNS and externally via a hosted DNS partner. We will require automatic failover to between sites for critical workloads such as SWIFT, RTGS and ORIMS.*

53. Is the Bank currently utilizing load balancing technologies and if so, how is it being utilized?

Answer: *The Bank utilizes a pair of Big IP F5 load balancers for managing its Internet connectivity across two local ISPs.*

54. Requirement "VMWare 7.x Enterprise and features: Highly Available, Vmotion, and Fault Tolerance". Can you confirm this was meant to be VMware 6.7 instead of 7.x?

Answer: *It should be VMware 6.7 or higher.*

55. Can you confirm the make, the model, the currently running SAN software and firmware version, and whether the existing SAN is under manufacturer support or not? To expand, can you confirm all existing underlying hardware and software related to the project is under manufacturer support or not?

Answer: *IBM Storwise V7000 Model 224 Generation 1*

56. Does the Bank require a SAN for both production and DR site?

Answer: *Yes*