**Appendix 1 – Specification**

This Specification provides full details of the Council’s technical requirements for meeting its key objectives for this procurement. These are:

* To purchase a Hyperconverged VMWare solution that can replace our existing compute and storage solution
* A technical solution that can backup and re-cover Oxfordshire County Council data to our on-premise data centre or to our cloud based DR site.

Bidders should consider the requirements detailed below and a construct their responses to describe a total solution and the component parts that meet the Councils requirements. Bidders should draw on their own experience in forming their response and provide sufficient technical detail to demonstrate how their solution meets the Council requirement

Bidders responses should be labelled Response to Quality Question - Q1 They will be assessed by reference to the detailed requirements below and scored using the criteria by reference to Table 3 found earlier in the tender documentation at 4.3 – Phase 2.

**Details of Minimum Requirements**

The compute and storage solution

* A hyperconverged system that includes CPU, Memory and storage
* Must be fully compatible with VMWare 6.5 and be upgradeable to future versions
* Have the smallest number of processor cores to achieve the desired processing requirements. (This is to reduce licensing costs)
* Enough storage configured at RAID 1 to achieve the storage requirements as detailed below
* Memory must be configured to run at the CPUs optimal recommendations
* Can communicate at 10, 25 and 40Gbs
* Top of rack switches to be provided as part of the solution
* Fault tolerance must be N+1 with the ability to lose 20% of the solutions capacity and still function
* The design should allow for seamless migration using vMotion to move servers from one environment to the other with minimal or no down time
* Solution must be able to integrate and fully upload VMware vSAN, vCenter, and vRealize Log Insight into the core licensing bundle on the system.
* The solution must deliver automated lifecycle management, applying upgrades non-disruptively and in an automated fashion to all the nodes in the cluster.
* Solution must have predictive failure analytics with proactive alert notifications sent both locally and remote (Manufacturer)

Backup and Restore solution

* Must be able to backup all Windows Servers from 2008 onwards
* Must be able to work with standalone servers and VM servers
* Must have the ability to back up Linux
* Must have the ability to back up, SQL, Oracle, SharePoint and MYSQL
* All retained backups must be held on premise
* Must have integrated backup solution that provides backup and recovery at VM and file level
* Must be able to send offline backups to the cloud
* Must be able restore to the cloud. Specifically, Azure but also AWS and others
* Must have encryption, compression and deduplication
* All license must be included to cover the current VM and Physical server estate with the minimum requirement to increase that estate by 15% each year over the next 5 years. Suppliers are required to produce the most cost-effective licensing model to meet this requirement.
* Preferably has the ability to backup O365 services such as OneDrive, SharePoint Online and Exchange Online

The proposal should include: -

* Both solutions need to be sized for the present requirements and for 5 years based on 15% growth year on year
* Creating both a High-Level Design and Low-Level Design
* Full documentation
* Customer agreed UAT plan
* Formal training for 7 people
	+ 4 attendees for the new hyperconverged environment so they can install, configure and operate
	+ 3 attendees for the new backup system so they can install, configure and operate
* A plan for decommission of storage environment to include removal, data deletion to HMG Infosec 5 "Enhanced' standard level and the Waste Electric and Electronic Equipment (**WEEE**) **Regulations**. Certificate to be supplied.
* The Service shall include manufacturer’s warranty for all components delivered under the suppliers solution and maintenance thereafter for the contract term and any extensions requested. Maintenance shall include maintenance and support to include replacement of all faulty parts, software and hardware updates, firmware updates and problem resolution as a minimum.
* Supplier to provide SLA for response time and time to fix.
* Full manufactures compatibility across all solutions
* Both solutions together should not exceed 2 x 42U racks
* The manufacturer of the Solution must provide a unified support centre, which must assist with all issues associated with network, hardware, storage and virtualization components.
* The support needs to 24x7x365
* A plan from contact award date to delivery, installation and handover of solution, including (but not limited to) a full test plan, including all delivery, testing and acceptance activities.

**Current Environment**

**Datacentre**

The current datacentre is a VMware environment with ESXi 6.0 hosts with vCentre 6.5, HP blade environment using IBM XIV storage as the backend SAN. The 39 nodes running on HP BL465’s are licensed with ESXi Enterprise Plus on a VMware EA agreement.

Below is an assessment of how it has been running over 5 consecutive days in the last month.

CPU

|  |  |  |  |
| --- | --- | --- | --- |
| Peak CPU | Net CPU | Cores | CPU Sockets |
| 398GHz | 1521.60 GHz | 680 | 78 |

Storage

|  |  |  |
| --- | --- | --- |
| Used | Free | Total |
| 132.83 TB | 48.26 TB | 181.10 TB |

Memory

|  |  |
| --- | --- |
| Peak Memory Usage | Total Memory |
| 3.69 TB | 4.91TB |

Other

|  |  |  |  |
| --- | --- | --- | --- |
| Peak Aggregate Network Throughput | IOPS at 95% | Peak IOPS | Average Daily Write |
| 10.76 gigabits/s | 11446 | 20318 | 8.37 TB |

OCC will provide power, rack space and cooling for the above solution. Power cables should be provided and be C14 or C20 compatible and not 3 pin UK.

All interconnect cables for switching should be included to ensure the solution works.

**Current Backup**

The current Backup Solution is based on TSM 6.2 and tape backup technology.

Below is the Data Profile for our present backup

|  |  |  |
| --- | --- | --- |
| **Primary Data Sets** |  |   |
|   | **Virtualized (y/n)** | **Amount (in TBs)** | **Number of full back ups per week** | **Number of incremental or backups per week** | **Daily change rate (%)** | **Annual growth rate (%)** | **Desired retention period** | **Additional comments** |
| Unstructured file data | Y/N | 100 | 0 | 7 | 5 | 10 | 3 months | 3 months once deleted or forever |
| Rich media (images, video, audio, PDF, CAD etc) | Y/N |   | 0 | 7 | 5 | 10 | 3 months | 3 months once deleted or forever |
| SQL | Y | 17 | 1 | 7 | 10 | 5 | 1 month | Hourly Logs, Daily Dif, weekly Full |
| Exchange | N/A |   | - | - | - | - | - | Exchange services are in the cloud |
| Sharepoint | Y | 2 | 0 | 7 | 2 | 5 | 7 years |   |
| Other Databases  | Oracle/DB2 | 4 | 1 | 7 | 10 | 5 | 1 month |   |
| VMs  |   | 5 | 0 | 7 | 10 | 5 | 3 months |   |
| Desktop/Laptop | N 2 only | 0.2 | 0 | 7 | 0 | 0 | 3 months |   |
| Other |   | 1 | 0 | 7 | 1 | 1 | 3 months | Physical server O/S |
| Total |   | 129.2 |   |   |   |   |   |   |