



Portfolio Holder Report

The portfolio holder will make a decision on this item after seven days have elapsed (including the date of publication).

Report of:	Portfolio Holder	Date of publication
Clare James, Corporate Director Resources	Councillor David Henderson, Resources Portfolio Holder	9 March 2023

Replacement of Core Infrastructure

1. Purpose of report

- 1.1 To seek approval to replace the Virtual Server Infrastructure, comprising of 3x physical servers and a single Storage Area Network (SAN).

2. Outcomes

- 2.1 To ensure we provide a reliable and performant server infrastructure for all council services.
- 2.2 Deliver our Digital Wyre Strategy and provide ongoing reliability for our core services.

3. Recommendations

- 3.1 That approval is given to proceed with the proposed replacement of the existing servers and SAN under the NHS Digital Workspace Solutions framework (SBS / 19 / AB / WAB / 9411), which is OJEU compliant and ensures suppliers meet Cyber Security standards.
- 3.2 That the equipment, costing an estimated £76,179 (plus £7,618 contingency) is added to the council's Capital Programme for 2022/23 funded from the IT Strategy Reserve, with a further £5,595 transferred to revenue to cover the cost of an additional warranty period.
- 3.3 That approval is given to proceed under the Exemption to Contract Procedures contained within the Financial Regulations and Financial Procedures Rules on the grounds that if a framework agreement is available that necessitates the council not having to go out to tender and the goods, works or services will still provide the council with best value for money.

4. Background

- 4.1** Except for two services, the entire server estate for Wyre Council is run on 3x physical Dell servers and a single Dell SAN, this accounts for approximately 110 production virtual servers. This approach allows us to maximise our use of hardware and allows for ease of expansion and server management.
- 4.2** The previous hardware refresh for the server infrastructure was carried out in 2017, with the intention of being reviewed after a period of five years which is the expected lifespan for hardware of this nature.
- 4.3** After some hardware issues requiring replacement parts, resulting in running on limited capacity, the current infrastructure is showing its age and coming to the end of its useful life in terms of running a production environment and requires replacement.

5. Key issues and proposals

- 5.1** We are now in to the sixth year of service for the current server infrastructure and have suffered several failed drives within the SAN and the failure of multiple memory modules in more than one server. We can purchase extended warranty for the servers, however, the cost is significant and it would be more beneficial to invest the funds in new equipment with faster and more efficient hardware.
- 5.2** We have experienced hardware failures with the old desktop infrastructure SAN, which was the same model and age as the current server SAN. We are aware that there is difficulty obtaining replacement parts for this equipment and therefore, we would run the risk of extended downtime in the event of a failure if we were to extend its service.
- 5.3** The hardware drivers for the existing server infrastructure will have a limited update cycle, therefore continuing to run them in a production environment could lead to running unsupported hardware, resulting in software and performance issues. This can also lead to security vulnerabilities in some instances.
- 5.4** It is proposed that the existing 3x Dell servers are replaced with 3x new Dell R650 servers at a cost of £36,580. The developments in processor efficiency will bring performance improvements of approximately +100% which should translate to a noticeable improvement in performance of our virtual servers. The upgrades in hardware will also provide the necessary futureproofing in terms of ongoing compatibility with new versions of the VMWare software that runs the bulk of the server estate. The additional memory included will provide the necessary overhead needed for upgrading to newer Windows Operating systems that generally have greater memory requirements.

5.5 It is proposed that the existing Dell SAN is replaced with a new Dell ME5012 Storage Array at a cost of £39,599. The replacement SAN will provide performance and resilience improvements including:

- Double the physical connectivity speed to the servers which directly translates to double the data throughput.
- Increased disk IOPS (input/output performance measurement) (approximately 3x read speeds on paper, but real world is closer to 2x).
- A 25% increase in storage capacity.
- Increased tolerance of two drive failures (currently limited to a single drive).

5.6 The existing SAN will be repurposed as storage on our secondary DR site as it will sit idle for much of the time and will only be utilised for testing or in a disaster recovery scenario. For this reason we have opted to extend the warranty on this hardware at a revenue cost of £5,595. It is likely we can expect another couple of years' reliable service owing to reduced usage. We considered the same approach for the servers. However, even at idle when powered on they will be subject to significantly more wear than the SAN.

5.7 The servers being retired from the live environment will be repurposed for use as a test environment for ICT, an activity which up to now has been carried out within the live environment which is not ideal.

5.8 The total cost for the replacement of the core infrastructure and warranty extension is £81,774 (excluding contingency for price inflation).

6. Delegated functions

6.1 The matters referred to in this report are considered under the following executive function delegated to the Resources Portfolio Holder (as set out in Part 3 Financial Procedures Rules of the council's constitution): "To consider departures from Rules relating to financial and contractual matters if appropriate."

Financial and legal implications	
Finance	<p>The cost of replacing the 3x physical servers is £36,580 inclusive of 5 years next business day (NBD) on-site Pro Support.</p> <p>The cost of replacing the SAN is £39,599 inclusive of 5 years NBD on-site Pro Support.</p> <p>The expectation is that the suitability of the equipment will be reviewed in five years' time, and either a replacement will be sought, or the warranty will be extended in line with extended service expectations. There are no further cost implications expected within this term.</p>

	<p>The cost of extending the support for two years on the current SAN is £5,595.</p> <p>The current issues regarding supply chain delivery and component availability for ICT equipment are negatively affecting prices. The costs outlined in this report are expected to be achievable. Any adverse fluctuations on the capital budget will be met from the IT Strategy Reserve and a 10% contingency on the capital cost is included of £7,618.</p>
Legal	A contract for the purchase and implementation of the IT equipment will be entered into with the successful supplier which complies with the Council's Financial Regulations and Financial Procedure Rules.

Other risks/implications: checklist

If there are significant implications arising from this report on any issues marked with a ü below, the report author will have consulted with the appropriate specialist officers on those implications and addressed them in the body of the report. There are no significant implications arising directly from this report, for those issues marked with a x.

risks/implications	✓ / x
community safety	x
equality and diversity	x
sustainability	x
health and safety	x

risks/implications	✓ / x
asset management	x
climate change	x
ICT	✓
data protection	x

Processing Personal Data

In addition to considering data protection along with the other risks/ implications, the report author will need to decide if a 'privacy impact assessment (PIA)' is also required. If the decision(s) recommended in this report will result in the collection and processing of personal data for the first time (i.e. purchase of a new system, a new working arrangement with a third party) a PIA will need to have been completed and signed off by Data Protection Officer before the decision is taken in compliance with the Data Protection Act 2018.

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List of background papers:		
name of document	date	where available for inspection
None		

List of appendices

None