

Exchange (email resilience)

IT Working Group, item 2

Committee:	IT Working Group	Agenda Item
Date:	15 May 2006	2
Title:	Exchange (email resilience)	
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Summary

1. This report outlines the recent problems with Exchange (the Microsoft system which supports Outlook) and proposes an improved, more resilient, replacement infrastructure.
2. Attached as Appendix One is a simple diagram of the current Exchange system and the way it integrates with both remote and internal users. With the exception of the firewalls, which have resilience built in, every other point has the potential to be a 'single point of failure'.
3. Within the Councillor Exchange Server is a single database containing all Member emails. Within the main Exchange Server is a single database containing all staff emails. The Councillor Server obtains and sends email via the main Exchange Server. This two server system is a legacy from a previous way of working for Members.
4. The recent problem occurred when the main Exchange Server database experienced a fault which meant that, in a very short space of time, the database almost doubled in size and the email system storage space available filled up and crashed the server. To correct the problem it was necessary to 'defrag' the database (checks the integrity of the database and removes all of the unused space). With initial backups to provide a roll-back position the defrag took 24 hours to run. The restored database then had to be copied back onto the Exchange Server. This process identified an additional problem with the server itself which had to be fixed. The database and Exchange system finally came back online 48 hours after crashing. Due to the back-up system installed after the previous Exchange problems, no emails or other Outlook information (calendars, contacts, tasks etc.) were lost.
5. Attached as Appendix Two is a proposed new infrastructure. Wherever possible resilience has been built-in and therefore the number of 'single points of failure' minimised. In addition to the new infrastructure the single councillor and staff databases are being replaced with five for councillors and ten for staff. This way if a database crashes only one fifth of councillors or one tenth of staff will be affected, and the restoration of the database will be significantly quicker due to the smaller size. The staff databases will be built on an alphabetical basis, whilst the councillor ones will be built in such a way as to ensure a proportional mix of the political make-up of the council on each database.

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6. The new Exchange Servers and Storage Area Network (SAN) will make redundant a number of existing servers. Two of these will be recycled to provide a second MSAM server and second UDCHome Server to provide resilience for all remote workers.
7. The two new servers will also have monitoring software installed. This software not only reports problems by email/pager/txt it also has the ability to predict a problem and to hand over the work to the second server before the problem actually develops.
8. The new set-up also removes the need for the separate Councillor Exchange Server.
9. The proposed new infrastructure has the following benefits for the council:
 - 2 raided servers with dual processors – if one processor stops working the other takes over and passes the main work to the second server.
 - 6 disk SAN - up to 4 can crash before the system starts to fail.
 - Monitoring software to email/page/txt as required on both servers.
 - Removing the Councillor Exchange Server which is no longer required.
 - Resilience
 - 2 servers with 4 processors (currently one server with a single processor)
 - SAN with 6 disks for database storage (currently part of the single processor server)
 - Split of staff/councillors across databases means should corruption occur it is likely to only affect a small number of users
 - Monitoring software will report potential problems to allow proactive work instead of reactive
 - Additional MSAM server to assist in remote access
 - Additional UDCHome server to assist in remote access
 - Part of the extended Uninterrupted Power Supply (UPS)
10. The cost of the new infrastructure is shown below:

	£
Exchange	
Hardware	21,594
Software	1,827
Monitoring System (per annum)	3,250
Consultancy (5 days)	4,750
MSAM & UDCHome	
Consultancy (2 days)	1,900
3 year 24x7 4 hour onsite support	<u>2,802</u>
Total	36,123

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11. The IT Section has an annual third line support agreement with the consultants. Part of this agreement includes 10 days consultancy support per annum. The agreement has sufficient days remaining to cover the consultancy costs of £6,650 which leaves £29,473 to fund.
12. The 2006/07 IT Capital Programme included a sum of £35,000 with £4,000 revenue consequences to fund an extension to the existing SAN. It is proposed to re-designate this money to fund this programme of work. The balance remaining will be used to provide additional resilience to the existing SAN. It is then likely that the 2007/08 draft IT Capital Programme will include the extension to the existing SAN which will have been postponed from 2006/07.

Recommendations

It is recommended that

1. Members approve the proposed Exchange Server infrastructure as shown in Appendix Two; and
2. Members approve the re-designation of the 2006/07 Storage Area Network IT Capital Programme item to fund this project.
3. Operations Committee on 29th June be asked to approve the changed use of the Capital Programme provision.

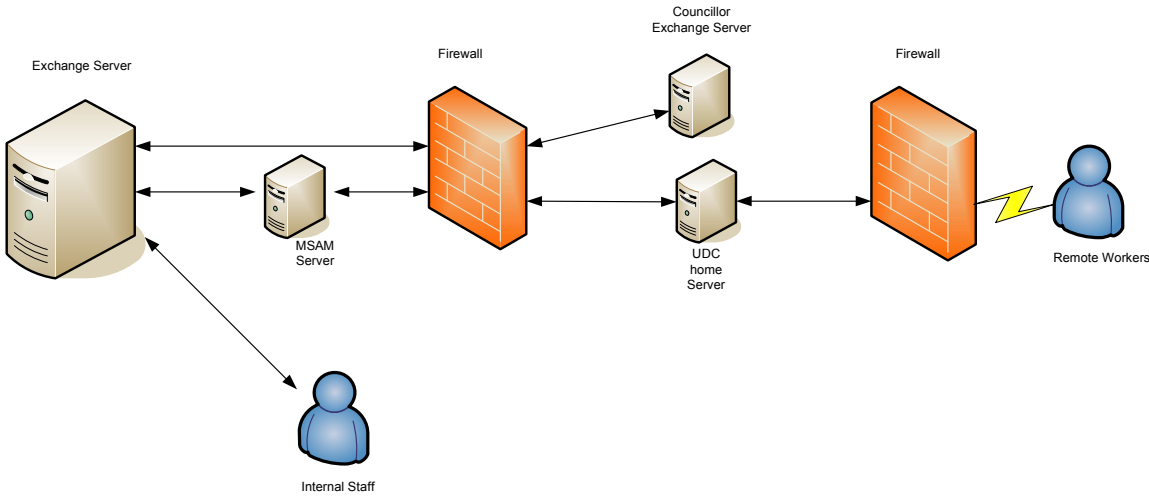
Background Papers

None

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Appendix One – Current Exchange Infrastructure



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Appendix Two – Proposed Exchange Infrastructure

