



Email Continuity for Exchange – a Better Solution

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In today's business world, email is an essential means of communication. Companies depend on email for business transactions, client interactions, record keeping, and more. A large number of those companies use Microsoft Exchange Server as their email solution.

Users demand continuous email service, but for administrators, that is a true headache. Unexpected things happen, such as: hardware failures, database corruptions, email server viruses, ISP service interruptions, and etc. Due to Exchange server's complexity, even a scheduled interruption for maintenance may take longer than anticipated. One small mis-configuration can cause hours or even days of interrupted email service. Under these circumstances, ensuring email continuity is a major challenge.

What kind of common continuity solutions are available?

There are two major categories of continuity solutions available for Exchange servers, they are:

1. Exchange Clustering
2. Hosted Service

Exchange Clustering

Exchange clustering is a solution provided by Microsoft. It requires two or more physical servers, each running an exchange server application. Usually clustering is run in an active/passive mode, where at least one server is passive waiting to take over when the active server fails. Prior to the 2007 version, Microsoft only offered clustering using shared data mode. Shared data mode is where two servers share the same physical data source, i.e. a shared storage device. This was a big disadvantage since the shared storage device became a single point of failure. With the release of Exchange Server 2007, a new feature was offered called Cluster Continuous Replication. This feature allows the information to be duplicated on



two data storage devices. This solves the problem of the storage being a single point of failure; however it is a more costly solution. It requires at least three servers, an active server, a passive server, and one additional server to keep the data integrity between the two data storage devices. A cheaper solution is also available called Local Continuous Replication, where two storage devices can be used with a single server. This solves the problem of the single point of failure for storage devices, but re-introduces the problem of single point of failure for the physical server.

Hosted Service

Several hosted service providers (HSP) also have solutions for continuity. Hosted solutions require copies of emails to be sent and stored off-site, usually at a data center. For sending copies of emails off-site, there are two implementations:

1. Companies need to modify their email infrastructure. Their MX record need to be changed, ensuring all emails are sent to the hosting service company first. From there the emails are forwarded or popped to the company's Exchange server.
2. Companies need to reconfigure their Exchange servers. Exchange needs to forward a copy of the email to the hosting company, this may cause additional bandwidth usage at the local site.

HSPs have different security compliance. If the Exchange server goes down, and the HSP takes control, users may have to use a different login/authentication method. Some HSPs try to integrate with Active Directory. This requires an export of the entire Active Directory off-site to the HSP. Generally if a company chooses to use hosted services, they are putting the responsibility of their email continuity into the hands of others. These solutions may be adequate for the mass majority but they are unable to address the specific needs of some businesses. When the company require any customization on configuration changes, they are at the mercy of the hosted service engineers.

There is a third alternative!! It is Europa.

Europa is a multi-functional email appliance. In-line with the Exchange server, it acts as a hot



standby redundant email server and comes with built in Anti-Spam/Anti-Virus protection.

Europa handles the dual role of being first-line-of-defense and last-line-of-service. First-line-of-defense is to block harmful emails from reaching the Exchange server, thus reducing the Exchange's load. Last-line-of-service is to act as an email server if Exchange fails.

Europa offers three layers of continuity. The following section describes the layers in order of progressive functionality. Each layer offers additional continuity on top of the previous layer.

Method 1: Exchange Redundancy

For Exchange redundancy, Europa appliance is placed in line with the Exchange server within the same LAN (see Figure 1). All emails are first received by Europa and then delivered to Exchange. If in the event that the Exchange server goes down, Europa will temporarily store emails locally, and notify the administrator that Exchange is down. Users can still send and receive emails using Europa's built-in email server. This solution ensures email service continuity, while providing the administrator time to resolve the Exchange server down situation.

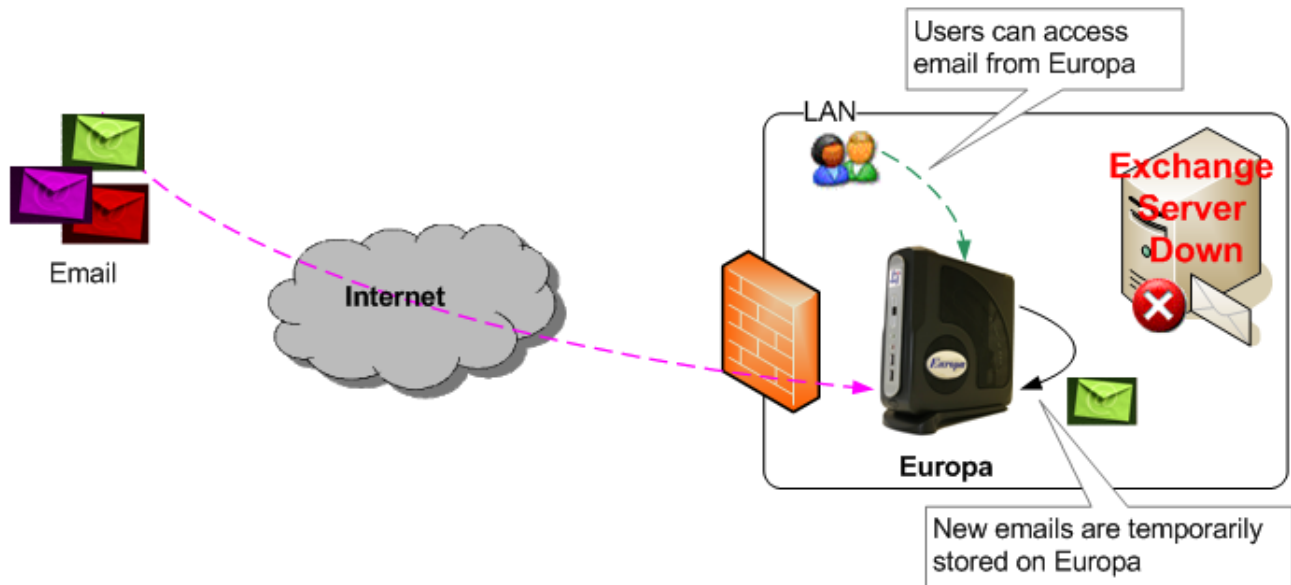


Figure 1: Europa Exchange Redundancy Solution

Method 2: Email Continuity + Exchange Redundancy

Europa can be configured as an Exchange Redundancy appliance as described in method 1. It also has a layer to ensure no emails get dropped even if the local Europa is down or there's an interruption with ISP service (see Figure 2). In this setup, Europa will continue to function within the local LAN. By adding a second lower priority entry to the MX record to point to Jovian's data center, administrators can ensure that emails sent to their site are not dropped even if their ISP or your local Europa is down. If there is a service disruption at the local site, anyone trying to send an email will eventually fail. With the second MX record, emails get delivered to Jovian's data center. From there, it is queued up by Jovian and forward back to the local Europa as soon as the local site is back online. This ensures email continuity, since external emails will not be dropped.

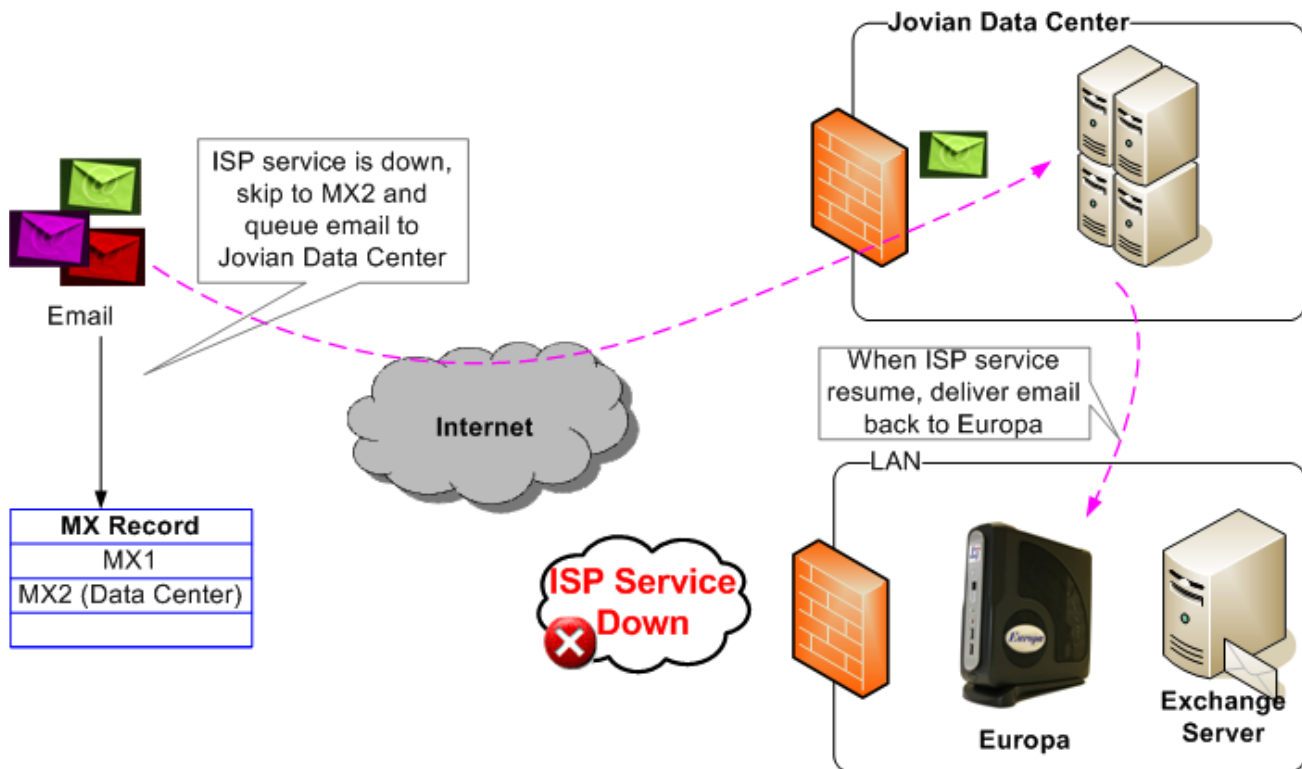


Figure 2: Europa Email Continuity + Exchange Redundancy Solution



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Method 3: Appliance Monitoring + Email Continuity + Exchange Redundancy

Europa can be configured as an Exchange Redundancy and Email Continuity appliance as described in method 2. It has a third layer of protection to send out beaconing signals to Jovian's monitoring center (see figure 3). When everything is operational, Europa periodically sends signals to Jovian's monitoring center. If there is a service interruption, no signals are sent. When the monitoring center does not receive signals by the expected time, it sends out notifications to the pre-configured contact(s). This ensures the administrators to be on top of any disruption with the email service. This provides a preemptive email continuity protection, quicker turnaround time and reduces the cost of diagnosis/ownership.

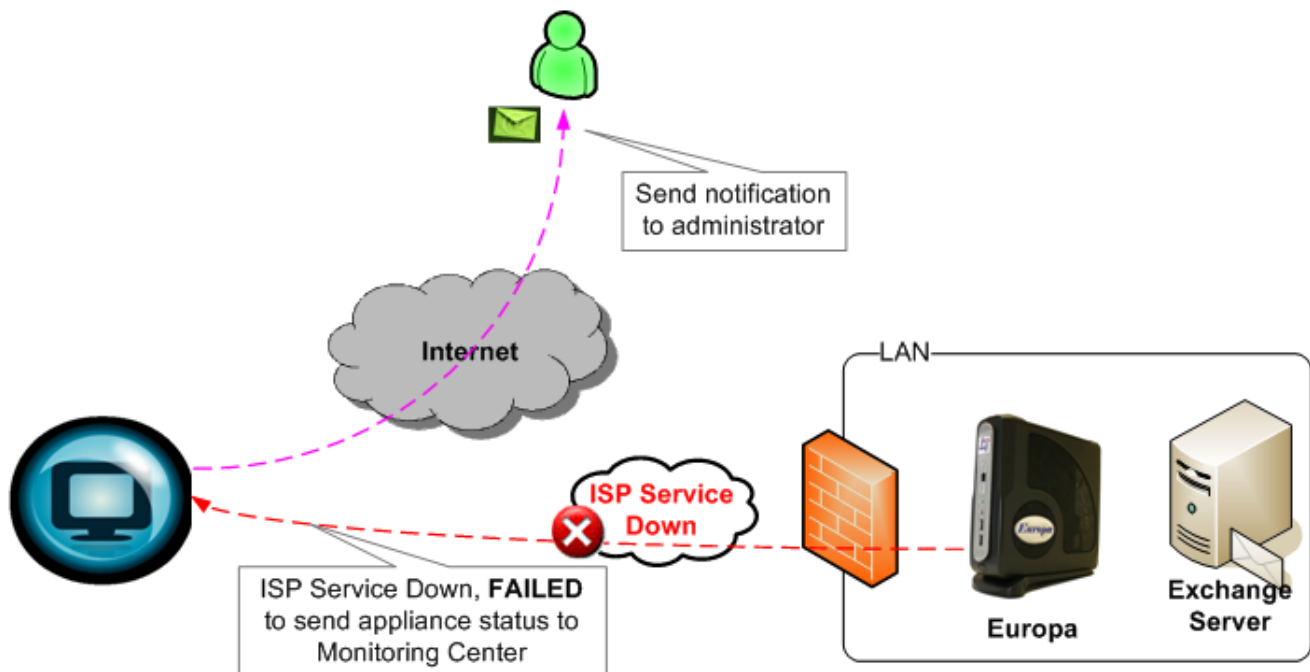


Figure 3: Europa Appliance Monitoring + Email Continuity + Exchange Redundancy Solution



Conclusion

Email continuity for Exchange server is a difficult task to accomplish. Exchange clustering is both costly, and difficult to setup. Hosted services maybe too generic for the individual company's needs. Europa is the ideal solution for those companies who want a cost-saving, yet effective solution. Europa, is an appliance with an added hosted service layer. It has the best benefits of both worlds. Normal emails are stored on-site, in the event of the site failure, emails are queue up, off-site, and returned as soon as possible. This ensures no loss of email. With the monitoring service, administrators have a peace of mind that someone is watching out for service interruptions. Even with all these features, Europa is still a cost-competitive solution, having no expensive Microsoft licenses, or multiple hardware needs, or monthly service charges.

About Jovian Technology Inc.

Jovian Technology Inc. is a Canadian company focusing on IT Infrastructure and Application products development. The company's primary product offer is Europa, the anti-spam filter appliance with failover redundant email server. Our mission is to provide the Value Added Resellers and their customers with a save-more-get-more email solution. To achieve our mission, Jovian is committed to bringing innovative ideas and continuous improvements to our products. Since its first release, Europa has maintained a high standard towards functionality, usability and affordability.

For more information please visit www.jovian.ca or contact sales@jovian.ca.