

The Evolution of Exchange Migrations:

From One-Time Events to
Continual Transformations

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“Planning for Exchange 2013”

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“A Smart Approach to Migration”

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BinaryTree

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The Evolution of Exchange Migrations:

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By Tony Redmond and Vadim Gringolts

Executive Summary

Vadim Gringolts, Binary Tree

Over the years, the prospect of executing an Exchange messaging migration was enough to send some of the most savvy administrators and consultants running for cover. At one time or another, it impacted virtually every organization and has always been considered a highly critical and challenging initiative. However, today it is gathering a brand new momentum, one could even call it a re-birth due to a unique combination of business and technology drivers.

From the business point of view, there are a multitude of merger and acquisition activities driving companies to consolidate or separate messaging environments. In addition, several infrastructure deployment alternatives have established themselves as the competition for the Exchange messaging market. Of course, there is the cloud – a private or a public one; the former essentially a dedicated messaging infrastructure hosted at an established well-defined datacenter, while the latter a truly shared space in a multi-tenant environment. It appears that the cloud has finally gained the level of trust and popularity that allows many organizations to embrace the cost savings and other benefits while overlooking certain restrictions

and limitations. Still, for those not willing or able to take their messaging content off-site, there is the safety net of on-premises deployments in internal datacenters – either administered internally or managed remotely by a service provider. Finally, there is a hybrid model, which combines the cost benefits of the cloud with the control of the organization’s on-premises environment. While in the past, a hybrid was looked at as a necessary evil; it has now been accepted as the norm for a cloud deployment and is appropriately supported by virtually every cloud vendor.

On the technology side, there is definitely a great deal to consider for both the innovators and the traditionalists. Those on the leading edge of technology can look forward to deploying the newest Exchange 2013 release. The Exchange lifecycle is no different from any other major software product: new versions come out, old versions become obsolete, and the evolution is inevitable.

Speaking of evolution, the time has come to look at the Exchange messaging migration not as a one-time event, but as a continuous transition. Exchange does not exist on its own; it is just one piece of a corporate technology puzzle, but an extremely important one at that. While regularly viewed as strictly a commodity, misused and often abused, it quickly becomes a mission critical application in cases of failure. It is absolutely critical to realize that the Exchange messaging environment at an enterprise of virtually any size is never at a “steady state,” it is undergoing a constant transformation involving and impacting a number of components: hardware, software, network, directories, servers, users, and data. The goal of this document is to serve as a guide to a better understanding of how to make this transformation more predictable, manageable, in other words, intelligent.

Planning for Exchange 2013

Tony Redmond, Windows IT Pro

Each new release of Exchange provokes the question of what advantage customers can gain by deploying the new software. But before attempting to answer that question, we should ask what Microsoft’s engineering goals are for the release; once we understand that, it’s easier to figure out where value might lurk.

Microsoft is engaged in a full-out battle against Google for supremacy in two areas: cloud and office applications. As it happens, both areas are terrifically important to Exchange. Recently, Google VP Amit Singh declared that the company’s “goal is to

get to the 90 percent of users who don't need to have the most advanced features of Office.”¹ In other words, Google believes that its Google Apps offering provides sufficient functionality to satisfy the vast majority of those who use Microsoft Office today. To succeed in that goal, Google has to persuade companies to embrace cloud services.

Microsoft Office 365 is the direct competitor to Google Apps and Microsoft has experienced considerable success in moving some of its installed base to the cloud platform. According to Gartner², roughly 7 percent of the available market currently uses cloud platforms, with 50 percent expected to move to the cloud by the end of 2020. Some companies will find it much easier to migrate from on-premises technology, with the most difficult task awaiting companies who are large, multinational, and distributed. But even so, given the economic and operational benefits that can be potentially gained from using cloud platforms, it's reasonable to assume that an increasingly large proportion of Exchange's current installed base will use Office 365 over the coming years.

The Journey to the Cloud

From a Microsoft perspective, Exchange 2013 is a critical part of the journey to the cloud. Each version since Exchange 2007 has incorporated more cloud-usable technology than its predecessor and the results can be seen in improvement in stability and reliability of Exchange Online. Microsoft's first cloud email service (Business Online Productivity Services, or BPOS) was based on Exchange 2007, a version that incorporated no real features to make Exchange suitable for deployment in a large-scale multi-tenant environment. This fact, coupled with Microsoft's need to build out its datacenter infrastructure and to understand how to automate the management of very large numbers of accounts from initial provisioning to ongoing operation, resulted in BPOS delivering spotty and inconsistent reliability.

Exchange 2010 was the first version where Microsoft had the opportunity to design in features that are attractive for cloud operation. The introduction of the Database Availability Group (DAG) attracted a lot of headlines, but the Mailbox Replication Service (MRS) is a more fundamentally important advance because it enabled background mailbox moves, a critical factor when the need exists to move customer mailboxes from on-premises servers across the Internet to Microsoft servers. The

¹ www.bizjournals.com/sanjose/news/2012/12/24/google-exec-we-want-to-poach-90.html

² www.gartner.com/id=2231415

capabilities of MRS were considerably enhanced when Microsoft introduced the hybrid configuration wizard in Exchange 2010 SP2 to make it much easier for customers to create the necessary points of connection to underpin co-operation between on-premises and cloud servers.

Many other technical advances existed in Exchange 2010 that made cloud services more feasible. Prompted by the huge mailboxes being offered by consumer email systems, Microsoft revamped the Exchange database schema to support much larger mailboxes than before. Even better, the new database schema meant that Exchange could take advantage of SATA JBOD-type solutions, meaning that large mailboxes became a feature that Microsoft could offer at low cost. Large mailboxes combined with archive mailboxes and retention policies to create a new storage environment for users. No longer forced by paltry mailbox quotas to constantly move items out of their mailboxes into Personal Storage Files (PSTs), users could keep everything online and have Exchange automatically archive or remove items from mailboxes under policy. Microsoft launched Exchange Online based on Exchange 2010 as part of Office 365 in June 2011 and has been very successful in attracting millions of users to move to Office 365. Part of this success is due to the strong track record established for availability and performance. After a couple of initial glitches, Exchange Online has confounded the fears of some who anticipated that no cloud service could be reliable due to its dependency on the Internet.

Technical Advances in Exchange 2013

Exchange 2013 builds on the foundation set down by Exchange 2010. Microsoft began the development of Exchange 2013 well before it launched Office 365, but had the luxury of being able to observe and monitor the operation of servers in an enormous infrastructure distributed in datacenters around the world. The result shows in the incorporation of the Managed Availability service in Exchange 2013, which constantly monitors the health of essential components running on Exchange 2013 servers and intervenes automatically if a problem is detected. Other important engineering advances in Exchange 2013 include:

- **Greater integration between SharePoint and Exchange:** Apart from being able to share common components such as the Search Foundation, creating better connections between Exchange and SharePoint allows Microsoft to deliver complete information management capabilities based on email from Exchange and document management from SharePoint. Many customers buy Office 365 subscriptions to get email; showing them a way to take advantage of products that they purchase alongside Exchange makes Office 365 a better deal for customers while

making the customers more reliant on Microsoft technology and therefore less likely to move to a competing service.

- ***Providing a path forward for customers who depend on public folders:*** Many companies use public folders, a now rather archaic throwback to a previous Microsoft attempt to provide a collaboration capability within Exchange. Those customers have been unwilling to upgrade as quickly as Microsoft would like because they see no advantage in doing so; the lack of news from Microsoft about how they can bring public folder data forward is a major hindrance. Exchange 2013 addresses the problem through the introduction of “modern public folders,” integrating public folders into mailbox databases and discarding the previously separate public folder database and replication structure.
- ***Making Exchange more easily automated than ever before:*** Automation is everything to a massive cloud structure. You simply cannot afford to have human beings intervene to fix problems when they invariably occur, so it is clearly important for any product that functions within a cloud infrastructure to automate wherever possible. Exchange 2007 started the journey to automation by being one of the first Microsoft products to support PowerShell. Exchange 2010 made management of many servers from a central location more possible by embracing PowerShell even more comprehensively. Exchange 2013 continues on the PowerShell journey, something that Windows Server 2012 and many other Microsoft products have now joined, and adds other automation features. For example, if a database copy fails, it’s now possible for a new database copy to be provisioned without administrator intervention, a process called auto-seeding. In addition, the process of failover between database copies that exist in different datacenters is much smoother, a factor that becomes increasingly important in terms of maintaining service levels as Microsoft serves multi-national companies that operate globally.
- ***Rationalizing administrative interfaces:*** Exchange has always included a Windows-based administration console – until Exchange 2013. The old MMC-based console is discarded in favor of a completely browser-based approach with the new Exchange Administration Center (EAC). Making the browser the fulcrum for administrative activity means that Exchange can now be managed by a huge array of devices, including Windows RT, Apple iPad, and even a smartphone.

Rationalization reduces engineering costs. Automation reduces operational expense. Integration drives increased use and makes products easier to market. The work done in Exchange 2013 by Microsoft has created a more attractive product all-around. Office 365 customers will soon get Exchange 2013 automatically as Microsoft deploys it in their datacenters. The remaining challenge for Microsoft is to

convince on-premises customers, especially those running now-legacy Exchange 2003 and Exchange 2007, to move to Exchange 2013 as quickly as possible.

Reasons to Use Exchange 2013

The engineering advantages that Microsoft gains from Exchange 2013 are clear. Things are a little less clear from the customer perspective, if only because every customer is different and each has varying circumstances and requirements. Listed below are a number of reasons that might make Exchange 2013 attractive to you.

- **Offline access for Outlook Web App (OWA):** Exchange 2013 includes an updated version of OWA that supports offline access for browsers that contain the necessary support, including Internet Explorer 10 and the latest version of Chrome.
- **Data Loss Prevention (DLP):** Exchange 2013 is able to detect the transmission of different forms of sensitive data in email, including items such as social security numbers or credit card details. DLP is governed by policies that are established for the organization to dictate what kind of data can be included in messages and the action that should be taken if sensitive information is detected. DLP works through a modified form of standard transport rules that are capable of recognizing patterns used by sensitive data.
- **Site mailboxes:** Exchange has always had weak document management facilities, which is unsurprising given that Exchange is an email server. Exchange 2013 links up with SharePoint 2013 to provide a seamless integration between email and document management in the form of site mailboxes that presents a common view of content held in shared mailboxes and SharePoint sites.
- **Modern public folders:** As mentioned above, many companies have been waiting for Microsoft to deliver a path forward for the data stored in “old” public folders. Exchange 2013 provides the answer by moving public folder content into mailbox databases and removing the need to operate a separate public folder infrastructure. Migration scripts are provided with Exchange 2013 but some work is required to prepare for and then execute the switchover to use modern public folders because the change is strictly a one-time, one-way operation.
- **Better compliance:** Exchange 2013 improves on the array of compliance features introduced in the last release by introducing the “in-place hold,” a query-driven implementation that keeps items of interest to discovery actions in their mailboxes until the time comes for the items to be gathered and reviewed by investigators. In addition, discovery searches are not limited to Exchange and can be extended to cover the content held in SharePoint 2013 team sites as well as the records of Lync conversations.

It's worth noting that a number of these features require you to upgrade your client infrastructure. OWA is not yet able to open site mailboxes (a deficit that will be addressed in an upcoming release), while site mailboxes and DFP policy prompts are only available through Outlook 2013.

Methods of Using Exchange 2013

Customers can use Exchange 2013 in three different ways. They can:

- Move their complete organization to Office 365. A migration can be “one-off,” where all mailboxes are moved over a weekend or similar period or phased, where mailboxes are moved in batches until all of the mailboxes have been migrated.
- Create a hybrid organization based on Exchange 2013. In this scenario, part of the organization will remain based on on-premises servers and part will use Exchange Online mailboxes. Exchange 2013 is an excellent choice for hybrid organizations because Microsoft has enhanced the facilities to enable interoperability between the two platforms in this release.
- Remain exclusively on-premises and upgrade an existing organization to Exchange 2013. Upgrading Exchange to a new version has always required careful planning and execution and Exchange 2013 is no different. Deployment is performed by installing new Exchange 2013 servers and moving mailboxes to them. This is only supported for Exchange 2007 and Exchange 2010 mailboxes, so if you're running Exchange 2003 today, you will have to go through an interim step of deploying some Exchange 2010 servers first to use as an interim point to hold the mailboxes en route to Exchange 2013.

The first option is attractive for small- to medium-sized companies that don't have any great interest in operating their own email service and currently run Exchange 2003 or Exchange 2007. Some very large companies have moved all of their mailboxes to Office 365. However, due to the planning required to move tens of thousands of mailboxes, this is an operation that is costly and takes months to accomplish. The second option is likely to be used by companies who see an advantage in assigning what can be regarded as utility mailboxes to sections of their user community while keeping higher-priority mailboxes, such as those belonging to executives and those who work on important projects, located on-premises.

The last option is for companies that want to maintain complete control over Exchange. This might be so for many good reasons, including the need to comply with a specific legal or regulatory regime that makes it difficult to move to a cloud service. Support is another issue that some companies have with cloud services. Although the reliability record of Office 365 is very good and at least comparable

with the performance delivered by very good IT departments, the fact remains that once you begin using a cloud service, you accept that you are “one within many” when problems do happen. Experience shows that cloud operators can be slow to respond to support queries from individual companies, or slower than they respond when a company takes out an individual support contract with a vendor, and losing the ability to call someone up to take ownership of a specific problem can be a difficult pill to swallow.

Change Everywhere

Accelerated change is one of the side effects of competition between Microsoft and Google. Where once customers could plan on the routine of an annual refresh for Exchange through a new version or a service pack, now they have to deal with new features that are slipstreamed into updates. In other words, the act of applying an update – including some that are released by Microsoft to address security concerns – can expose new functionality in a server that affects how the server works. Often this is good because the new feature proves useful in terms of system management or increases overall reliability, but sometimes it can impact users if a feature isn’t completely analyzed and understood before it’s released into production. For example, Microsoft changed the way that the Managed Folder Assistant (MFA) works in Exchange 2010 SP2 RU4 in August 2012 so that MFA would process calendar and task items in user mailboxes for the first time. On the surface, this seems like a good change, but if you had deployed retention policies that included default tags mandating removal of items after a short period unless tagged otherwise, then MFA might clear out user calendars and task lists comprehensively.

An important step that Microsoft has taken in Exchange 2013 to help manage change in the future is to decouple the version dependency that previously existed between server roles. In the past, roles such as the mailbox and client access server depended on each other in such a way that you were always forced to upgrade both roles together. This created a lot of work and much disruption within the infrastructure.

The Exchange 2013 version of the client access server is largely stateless. It continues to handle incoming client connections and as such is a fundamental component. However, no data is processed on the client access server and it is a much simpler server to set up and maintain. In the future, you’ll be able to upgrade client access servers to a brand new Exchange version without having to touch mailbox servers and because the two server roles are connected using standard protocols such as HTTP, the two will continue to work together smoothly. Taking the reverse

route, you should also be able to upgrade mailbox servers without touching client access servers. I suspect that this will be an unusual course to follow, but the idea of decoupling versions is to make the scenario feasible.

You can anticipate further and increased change in the future. Competitive pressure means that Microsoft is unlikely to relent in its efforts to stay ahead of Google. The good news is that the same pressure that brings change to server functionality should also keep cost under control. Neither Microsoft nor Google can afford to increase prices too much without exposing themselves to adverse reaction from existing customers coupled with difficulties in sales campaigns.

Overall, it's a great time for email systems. The software is more functional than ever before and services are priced extremely competitively. The challenge now is how best to manage the problems posed by quickening change while running whatever variant of Exchange you select at minimum cost. It should be interesting to see how companies take to this challenge in the coming years.

Planning for Continual Migrations

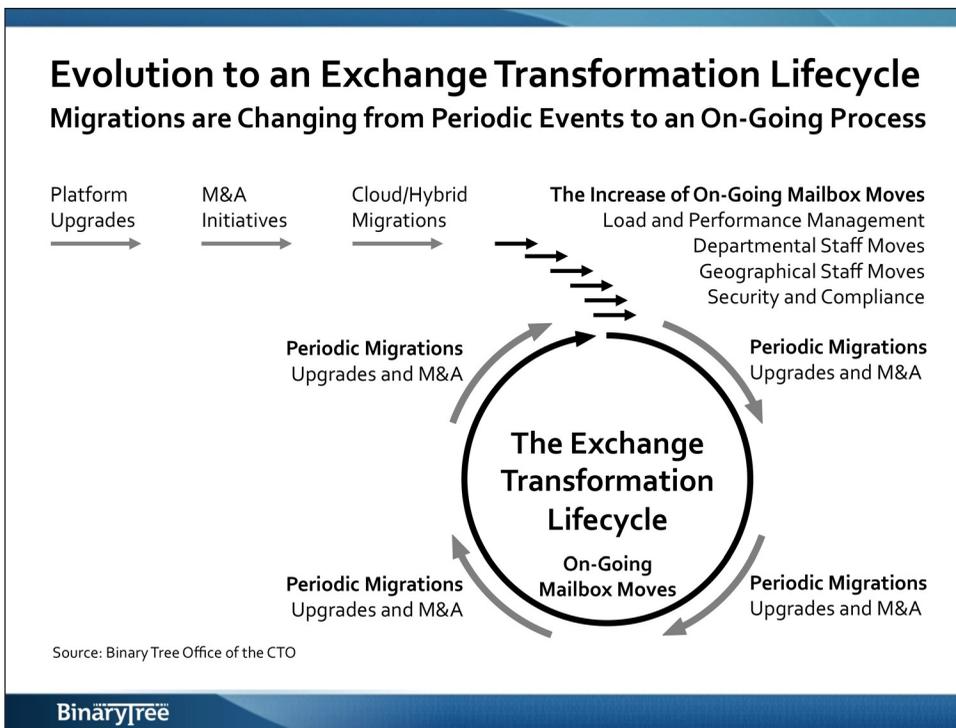
Vadim Gringolts, Binary Tree

Exchange migration can no longer be considered a one-time event, but should be established as a continuous transition and evolution that accounts for commercial, organizational, and technological business drivers. Historically, Exchange migrations have been performed only periodically when organizations chose to upgrade to a new version of Exchange or if they entered into a merger, acquisition or divestiture.

In order to remain competitive, agile and innovative that reality and perception must change. Many organizations are only now realizing the continual effort needed to move user mailboxes between servers due to load and performance considerations, security and compliance requirements, and corporate restructuring as well as staff moves between geographical locations and departments. In addition, the cloud and hybrid deployments are driving the need for a shift in how migrations are perceived, performed and managed.

Many organizations have already moved email to a public or private cloud and even more are planning for a move to a cloud in the near future. When they arrive at the cloud they often realize that their most efficient deployment model is a hybrid deployment. Hybrids enable organizations to optimize where they host their user

mailboxes with some users hosted in the cloud and some hosted in their traditional on-premises environment. When you consider all of these various drivers of migrations together, you can only conclude that most organizations will soon reach a tipping point in how they need to manage migrations. The time has come to manage enterprise email migrations as a transformation lifecycle.



The Evolution to an Exchange Transformation Lifecycle

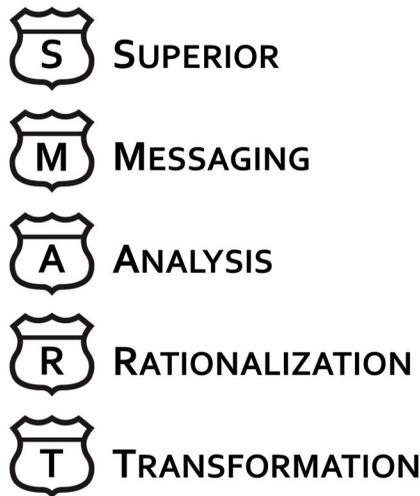
A Smart Approach for Migration

A successful migration is a result of applying a best practice methodology and the selection of a proven technology and knowledgeable practiced advisor. Together with your advisor of choice, you can then begin to map out the considerations that will ensure a successful transformation. There are a number of solutions in market today that commit to delivering a complete migration experience, but can you afford to think about your migration as a separate event each time – or do you adopt an approach that will provide a repeatable formula for success via a single investment.

Binary Tree has developed the SMART Exchange Migration, a best practice methodology that combines technology and guidance, derived from more than twenty years of experience in managing the world's most complex and multifaceted migrations. This prescriptive guidance offers organizations the right formula for successfully managing the Microsoft Exchange Transformation Lifecycle.

The Binary Tree SMART Exchange Migration

Guidance for continuously transforming Exchange messaging environments



BinaryTree

The Binary Tree SMART Exchange Migration Methodology

Superior

The SMART approach dictates the use of superior, proven technology solutions and partners that are rooted on trust and experience. In selecting a partner and trusted advisor that is already knowledgeable with a best practices methodology and proven technology, your organization can ensure that your success plan will be started with the proper messaging evolution discussion and planning.

Messaging

Messaging is both the most basic and critical component of your infrastructure, and the proper trusted advisor will help guide you through a selection of a new or enhanced

messaging platform. Additionally, by understanding the reasons for your shift, you can also establish a success benchmark for what you hope to get out of this migration.

Analysis

A thorough understanding of your entire messaging infrastructure needs to be at the forefront of your migration. Collecting and analyzing all of the information about your current deployment and infrastructure will enable you to determine what is most important to the business. This comprehensive collection will illustrate the complex and unique nature of your messaging environment, consisting of your users, servers, policies, workflow and content.

Rationalization

Now you are ready to begin the most important phase of the SMART methodology, deciding on what to migrate where, when and how. Rationalization comes from mapping the results of your comprehensive analysis to your business requirements. The SMART methodology promotes the optimization of your migration by instituting a decision framework for the scrutiny and rationalization of your business users, policies, workflow, and content.

Transformation

By employing the SMART methodology for your migration needs today, you are automatically transforming the way you approach any future migrations. As messaging platforms continue to evolve and the technologies supporting them continue to shift, it will become more advantageous for companies to adopt the ability to continuously transform your infrastructure. Maintaining a competitive edge is at the center of what makes companies leaders, and innovation is traditionally what drives the continuous evolution of messaging platforms to deliver capabilities that keep their users happy, productive and mobile. The very virtual world we all exist in today was created by email in the workplace and the introduction of the Cloud. In order to maximize on that innovation and the efficiencies that can be achieved by implementing The Binary Tree SMART Exchange Migration, your organization has to approach every migration as a transformation so that you may continuously evolve your business.

Conclusion

Many view Exchange as a commodity that operates on its own with limited administration and does not need special attention, also referred to as financial and human investment. Others consider it sufficient to periodically take Exchange through a migration or a health-check and then leave it alone for extended periods of time. Some attempt to take a more methodical approach to the Exchange administration only to encounter the need for multiple native or third party tools, utilities, and products to accomplish different tasks.

The ultimate key to success of the on-going Exchange administration, transformation, and evolution is a combination of complementary methodology and technology enabling one to collect and analyze, rationalize and execute. Collection of information must be complete and accurate; analysis must be thorough in breadth and depth; rationalization must be based on well-defined technical, organizational, and financial rules and principles; and execution must be precise.

Embracing the SMART Exchange Migration means adoption of the above-described approach. To implement it, one must be armed with the right product capable of performing all the actions in a logical and cohesive manner.

About Binary Tree

Binary Tree is the provider of SMART Migration software and solutions for migrating to Microsoft Exchange and Microsoft Office 365. Since 1993, Binary Tree and its business partners have helped over 6,000 customers around the world to migrate more than 25 million email users including powering many of the largest email migrations in the world. Binary Tree's suite of software provides solutions for migrating from Exchange 2003/2007 and Lotus Notes to on-premises and online versions of Microsoft Exchange. Binary Tree is represented by business partners worldwide who provide specialized services and a proven methodology for guiding customers through complex transitions. Binary Tree is a Microsoft Silver ISV Partner, an IBM Advanced Business Partner, and is one of Microsoft's preferred vendors for migrating to Microsoft Office 365. Binary Tree is headquartered in the New York metropolitan area with international offices in London, Paris, Stockholm and Sydney. For more information, please visit us online at www.binarytree.com.

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