BYNARI WhitePaper

# InsightConnector ™ Version 1.0

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# Executive Summary

## InsightConnector™ Version 1.0

Users and administrators who work with InsightServer can add Microsoft® Exchange functionality to their environment and still gain the benefits of the Open Standards Internet Mail Model and the usability of Microsoft® Outlook with InsightConnector. Through InsightConnector Bynari Inc. introduces comprehensive interoperability amongst Outlook user populations and InsightServer facilities including directory synchronization, and sophisticated workflow integration. Bynari's solution also maintains the Microsoft objects, MAPI properties and Outlook components allowing interoperability without having to use third party protocols or objects.

InsightConnector provides these:

- Ability to use highly scalable, reliable and secure messaging and collaboration without losing Outlook functionality

- Cost savings associated with server consolidation such as migrating an entire enterprise onto one single instance of Linux with the associated elimination of Client Access Licenses

- Interoperability with both Exchange and Insight server

- Rapid deployment by allowing users to migrate incrementally without the need for external temporary staffing

- Interoperability between Windows and non-Windows based servers

## Examination of the Insight Messaging Solution

In this paper, we want to consider facts that have relevance to your company whether large or small. Small to Medium sized business can experience cost savings of 70% or greater. In an Intel based environment, Bynari's messaging products users experience increased reliability, flexibility and scalability with Insight products as opposed to using Exchange.

For larger enterprises, in a test of a single instance of SuSE Linux for the s/390 Bynari's InsightServer scaled to 64,000 users using a single processor with approximately 200 MIPS. The host system used VM with two virtual processors configured and less than 10 GB of Disk Storage. At 15% peak use or approximately 1,000 messages a minute, the system averaged a CPU load factor of 40%.

In examining Insight Messaging Solutions, we'll focus primarily on InsightConnector for Outlook. Other Bynari Whitepapers focus on different elements of the solution. In this paper, you'll understand that consolidating users onto a single platform doesn't have to take 33 days.

## Exchange or Outlook?

Most analysts agree that Microsoft Outlook continues to dominate the enterprise market because it's simply a great client. Outlook's intuitive interface, ease of use, versatility and reliability as a desktop application makes it a user favorite. One must find it difficult to debate Outlook's acceptance.

Unfortunately, Outlook has to drag Microsoft Exchange behind it.  As much as Outlook continues as a favorite among users, to the same extent Exchange may be disliked. As many have discovered, if one wants the full functionality of Outlook, they have to put up with an often unwanted necessity.

The Microsoft Outlook-Exchange combination exists primarily because previously nothing existed as an alternative. Many messaging and collaboration servers exist but they can't equal the functionality Exchange provides much less improve on the solution. So, people in those organizations with Outlook, simply put up with Exchange.

## Freedom of Choice

Microsoft uses the popularity of Outlook to continue locking in enterprises into it's poorly performing Exchange Server on NT and Windows 2000. Even though Outlook can use the Internet Mail Model, Microsoft disables the most popular Outlook features in the event Outlook isn't connected to an Exchange server. In Internet Only Mode (IMO) calendaring as a collaborative tool becomes severely hampered.  Outlook essentially becomes a PIM or personal information management product on your PC.   Without Exchange one loses sharing of folders, meeting management, contacts, notes and tasks. If you only have an ISP, Outlook becomes little more than a robust e-mail client.

Bynari's expertise lies in the area of messaging and collaboration. We study messaging systems of various kinds. We test and profile competitive servers looking for their functionality, scalability and availability. We feel that while Exchange previously provided the only full-service functionality to Outlook, it ranks below many other mail systems in several categories.  We see this as a dilemma: The best of class messaging and collaboration client tied to a lesser quality server.

## Building a Competitive Server

We decided to build a server designed as "Best of Class" regardless of platform. Our requirements included total compliance with RFC (Internet) standards and Open Source licensing. Once we built a highly reliable and available server which could scale on an IBM zSeries mainframe we decided we would tackle other issues related to client software.

To prove our concept, we had InsightServer tested and benchmarked in a world class facility in Gathersburg, Maryland. The results provided us with our own assurance we had done the job we set out to accomplish. Now, we had to tackle finding and/or building a client that could provide the same standards we set out to meet.

We came to realize that Outlook provided the type of client people would want to use with our server. We saw several challenges in using Outlook including:

- Furnishing MAPI protocol and Microsoft remote procedure calls (RPC's) based on an extended version of the Distributed Computer Environment (DCE)

- Microsoft's "either/or" tactics of using an Exchange server or disabling the major collaborative feature sets

- The pervasive belief that one couldn't accomplish Exchange functionality on an Internet Messaging Application Protocol (MAPI) server using OpenLDAP and an open source mail transfer agent (MTA)

- Maintaining a pure Microsoft object class instead of a third party calendar server

Using the Microsoft SDK for Exchange, we built a robust plug-in that provides Outlook mail stores on a Cyrus IMAP server. In building the plug-in, we saw several requirements:

- Create a framework to facilitate the development of open standards based messaging and collaboration clients for other operating systems especially Linux, UNIX, Solaris, BSD and Mac OS X while maintaining compatibility with Outlook

- Allow Outlook users to continue using Exchange servers at the client level and in communicating with InsightServer during migrations and with specialized applications

- Help companies sustain their desktop investments by making each version of Outlook more compatible with the each other

- Let Outlook do the job of migration

Unlike other messaging and collaboration systems – InsightConnector allows Outlook to stay true to the MS Outlook objects used in the messaging and collaboration tool. So, we didn't invent our own protocols, calendar server, etc. we provided stores and service providers for Outlook.

## *Connecting Outlook to Insight Server*

Let's look at how we accomplished connecting Outlook to Insight Server.

As stated previously, Microsoft provides an "either/or" solution with Internet profiles. If one chooses to use Exchange, one enables the full client functionality but then only has POP3 as their Internet Mail Delivery Agent (MDA). POP3 provides a send, hold and deliver protocol. It does not provide server side functionality and options including user administration of their own folders and access lists.
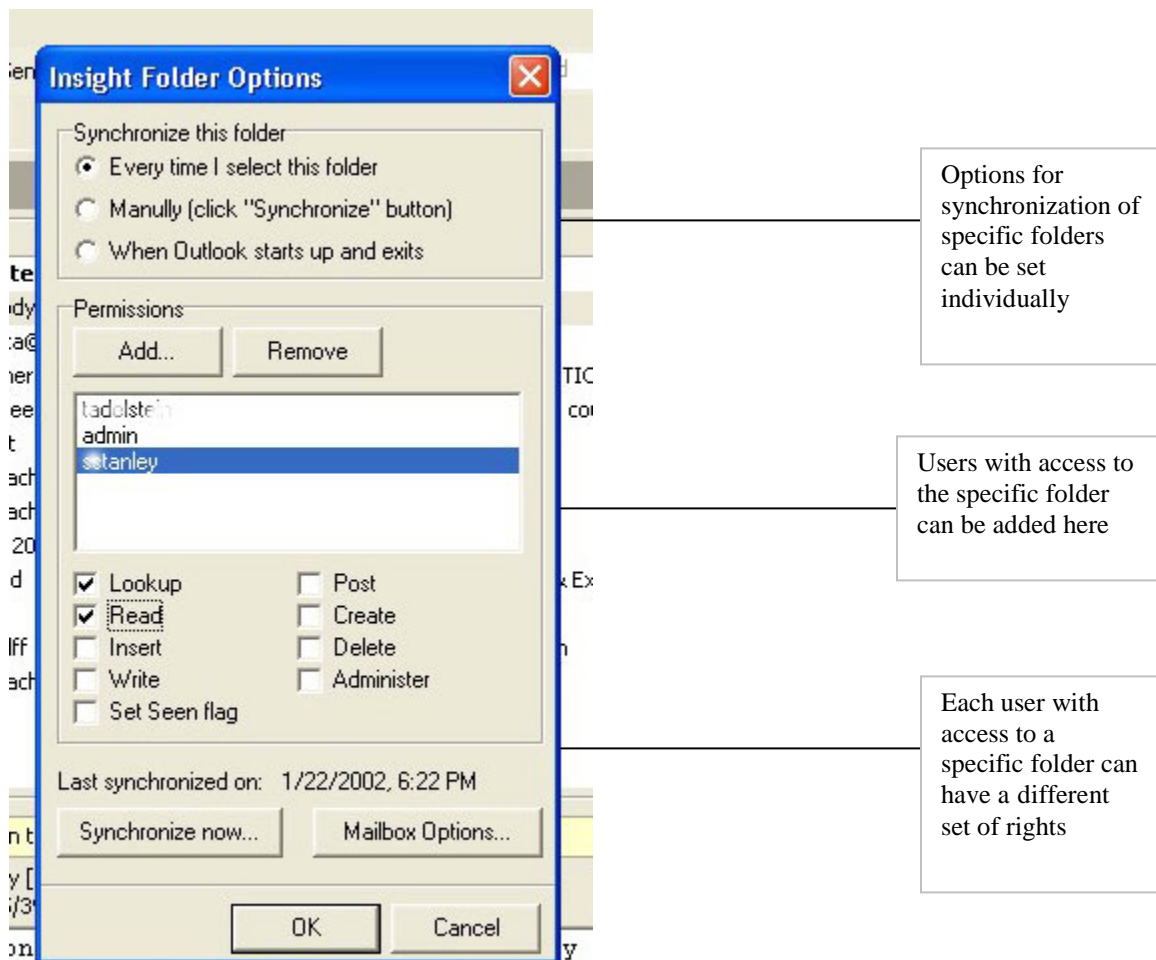
So, to resolve the limitations of POP3, we built an IMAP client library and added its functionality to Outlook regardless of which mode of configuration the original installers' used.



InsightConnector adds these functions to the toolbar
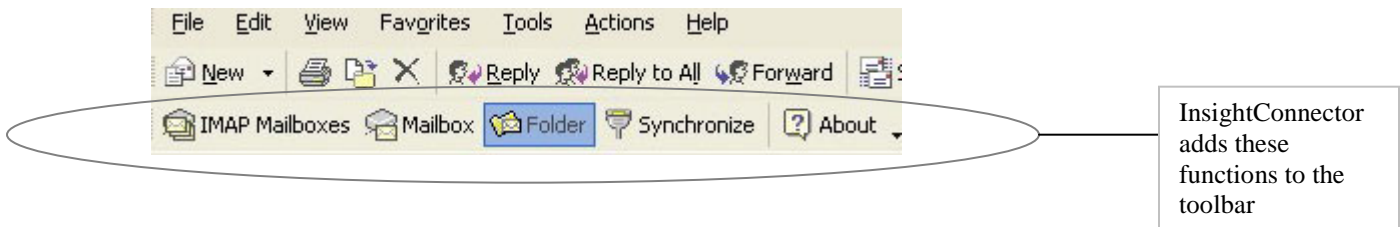
Once we had IMAP functionality, we programmatically created a method of generating the standard Outlook folder set on our IMAP server while providing share level and user level control deploying standard Access Control List (ACL) built into to the security model of the IMAP server.



Initial folders self-generate on the IMAP server via InsightConnector
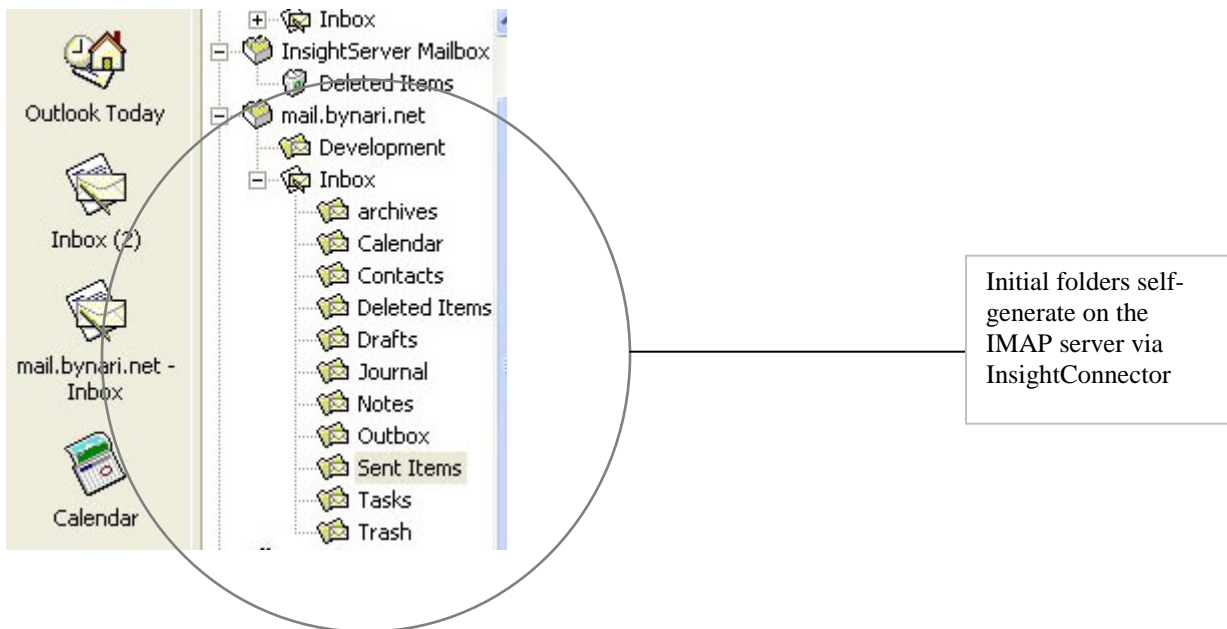
Next, we addressed enabling folder sharing and how to update their contents. The following property sheet provides an example of how the user can control access to their folders and provide for synchronization. Folder options include how synchronization occurs and providing user level access and the level and kinds of permissions granted.

**Insight Folder Options**

Synchronize this folder
- ● Every time I select this folder
- ○ Manully (click "Synchronize" button)
- ○ When Outlook starts up and exits

Permissions

[Add...] [Remove]

taddolsteh
admin
stanley

- ☑ Lookup
- ☑ Read
- ☐ Insert
- ☐ Write
- ☐ Set Seen flag
- ☐ Post
- ☐ Create
- ☐ Delete
- ☐ Administer

Last synchronized on: 1/22/2002, 6:22 PM

[Synchronize now...] [Mailbox Options...]

[OK] [Cancel]

3.0 version of Bynari for Linux S/3

Options for synchronization of specific folders can be set individually

Users with access to the specific folder can be added here

Each user with access to a specific folder can have a different set of rights

We then developed service providers to capture Outlooks native MAPI properties and objects for receiving, storing and forwarding messages and creating, storing and forwarding the same.

The InsightConnector Host Interface allows users to map their folder stores to InsightServer.

Once the user maps his or her folders' stores to the IMAP server in InsightServer, the user can verify that a successful connection occurred.



This button allows the user to verify that the folders are on the IMAP server
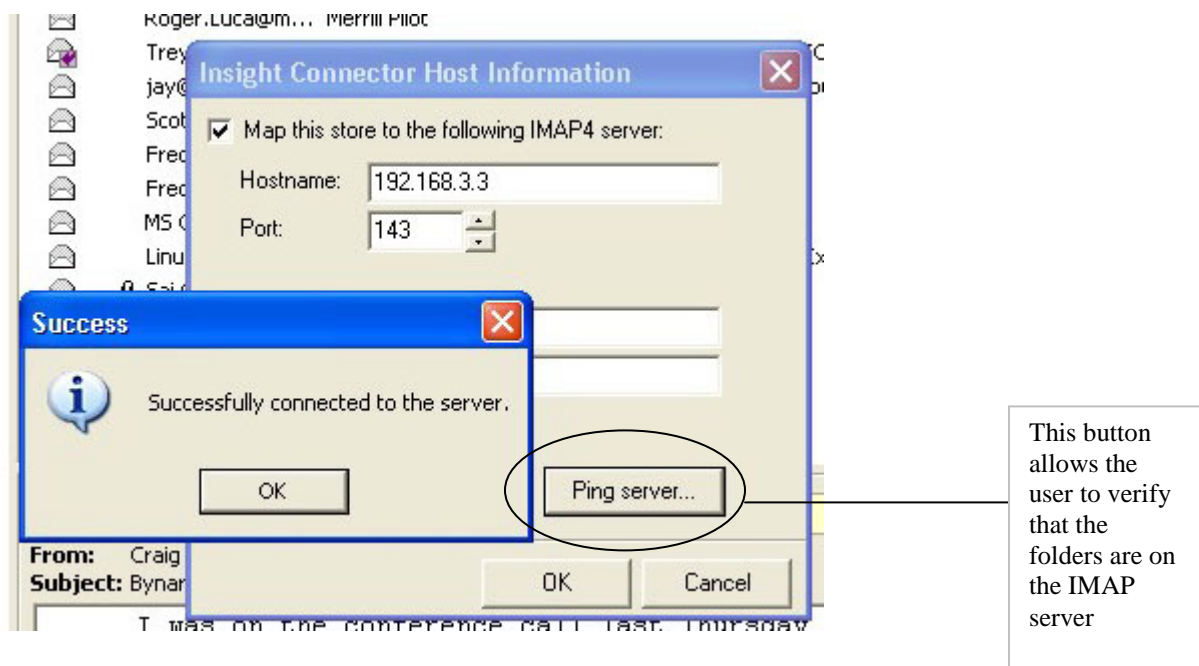
## *Capabilities*

InsightConnector provides the capability of sharing all special folder types available in Outlook:

•       Calendar items
•       Contact items
•       Journal items

- Mail and Post items
- Note items
- Task items

User defined forms are also supported.

In the Workgroup or Exchange mode, the major functions of Outlook turn-on or become enabled for the user.

All information is stored on Bynari InsightServer. Regular mail and post items are treated as normal IMAP messages; nothing special is done to or with them.

**Special folder types are handled differently**.

Each folder that contains special items has an internal IMAP message that lets the plug-in know what type of folder it is. The rest of the messages are IMAP messages that contain valuable information in the headers, and an attachment. The attachment exists as MIME and Outlook initiates a stream that structures text, formatting, MAPI components, CDO's, Outlook Objects, and attachments. Each attachment provides the version of each individual item, for example, a Meeting Request, or Contact entry.

## *Synchronization*

InsightConnector for Outlook supports directory synchronization with full-load or only items that have changed. This means you can perform a full synchronization or pulling an entire directory from Exchange or InsightServer or just grab changed items.

Upon synchronization of the selected folder, messages are compared locally and remotely and the mailbox is further synchronized, by retrieving new messages on the server and deleting or modifying message to represent the local mail store. Initial synchronization of a folder may take longer than future synchronizations, because all messages on the server have to be transferred to the local store. The next time a folder synchronizes, it only needs to download new messages, and upload modified messages.
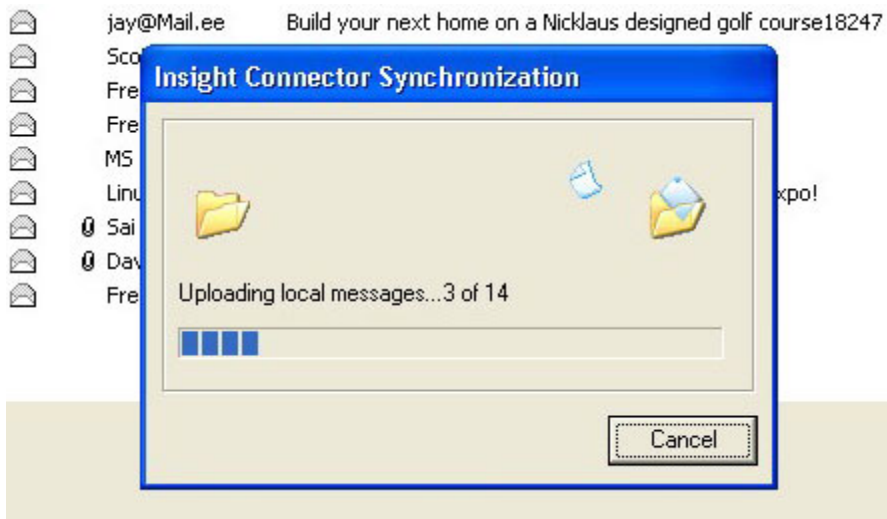
## InsightConnector with other Email Server Products

InsightConnector provides the same or similar functionality with other messaging solutions. If the third-party messaging server provides IMAP functionality similarly as it does to Cyrus IMAP, then the InsightConnector can be used with that solution. The major requirement of the IMAP server involves Access Control Lists or (ACL's).

So, an Outlook user can share their folders. The rest of the product suite will require a directory service for user authentication or if the IMAP server uses a different authentication mechanism

If you use a different messaging server and wish to use InsightConnector, ask your vendor if they support an IMAP4 server with Access Control Lists (ACL's). If you are considering a new solution, we suggest that you review their platform for features you feel will best support your environment.

## Migration

When considering a change in messaging and collaboration servers, the task ahead often appears insurmountable. Often, one wonders if the effort  equals the trouble financially and in the toll extracted from an organizations IT resources.

With InsightConnector, Bynari has reduced the task to almost a minor deviation from ones normal work schedule.  InsightConnector's Interprocess Communications (IPC) bridge a set of client side migration components which provide transparent migration in the course of using Outlook.

Once you deliver InsightConnector's two libraries to the user's desktop, the act of synchronization performs most, if not all, desk side migration tasks. This eliminates the need to reinstall Outlook or Office.

Administrators can provide migration of user's accounts on the server side programmatically.  Numerous migration tools and custom scripts exist in Perl, the C Computer language, PHP, etc.  Look on Bynari's website for a listing of tools.

Whatever method you choose, know that your migration can occur almost transparently with proper planning.

## Conclusion

InsightConnector helps users and administrators add Microsoft Outlook functionality to Open Standards messaging and collaboration environments. Additionally, InsightConnector can make the decision to move to Open Standards based solutions easier by allowing existing installed user based clients remain in tact.

You can find InsightConnector available from Bynari Inc. or from our various resellers. Visit our website at http://www.bynari.net to find out how you can contact us.

Respectfully submitted

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