

# Sumatra Rhino Event Sink™

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# Sumatra Rhino Event Sink™ Administration Guide

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# Thanks

Sumatra Development would especially like to thank Nancy Hough of Qualcomm, whose certainty that there were better solutions to offer her users led to the development of Rhino.



# Introduction

This guide explains how to install, configure, and administer Sumatra's Rhino Event Sink™, a store event sink that automatically processes meeting acknowledgements in Exchange mailboxes. This guide leads you through the installation process, which installs Rhino on your computer and registers Rhino as a Component Object Model (COM+) component.

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## Why Rhino?

What does Rhino accomplish?

Rhino runs on each Exchange mailbox server to automatically intercept certain meeting requests and replies that the end user's do not want to see or do not want to deal with. For example, users don't want to have to process meeting acknowledgements to ensure Outlook's tracking tab gets updated.

Thus, you can configure Rhino to intercept Meeting Replies to:

- Look for all meeting with the following criteria:
  - Meeting Acceptance
  - Meeting Tentative Acceptance
  - No comments sent from the guest to the meeting owner
- Update the tracking tab with the response
- Delete the response without delivering to the Inbox (this is an option for blank tentative acceptance)
- Deliver all meeting items that DO NOT meet this filter criteria to the Inbox (cancellations, declines, accepts with comment)
- Update the tracking tab for Declined meetings, cancellations, and accepted meetings with comments, and leave the response in the Inbox.

For Meeting Requests, it can

- Look for all meeting requests and:
  - Accepts them as "Tentative" in all guest calendars, and
  - Show the guest's free/busy time as "tentative".

Thus, Rhino:

1. Reduces calendaring email messages delivered to an end user's Inbox
2. Increases reliability of the Tracking tab information
3. Streamlines meeting creation (change the default reply to Tentative for all proposed meetings for all guests so it shows up on their calendar.)
4. Ensures meeting integrity<sup>(1)</sup>

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<sup>1</sup> Rhino removes some sources of meeting corruption by intercepting meeting messages from guests, and automatically updating the meeting's tracking information. Corruption arises when meeting guests and owners delete messages before reading them – which fails to update the Tracking Tab information in Outlook.

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# Software Requirements

Make sure that your computing infrastructure meets the following software requirements.

## Software Requirements

The following software is required to perform the procedures covered in this guide:

- Microsoft Windows® Windows Server 2003™ SP1 or later;
- Microsoft Exchange Server 2003;
- Outlook Web Access (OWA) for multiple Exchange back-end server;
- A service account on the Exchange server that can read/write to MULTIPLE Exchange mailboxes across multiple Exchange stores;
- Rhino Event sink and Registration modules from Sumatra.

# Understanding Rhino

Rhino is a server-side, synchronous event sink that automatically processes meeting acknowledgements and meeting requests. Exchange fires Rhino whenever it receives incoming calendar-related messages (for mailboxes on an Exchange store). Calendar-related mail includes meeting requests, replies, updates, and cancellations. Calendar messages are processed in a first-in, first-out order.

For example, if you've configured Rhino to accept meeting acknowledgements that do not have any comments from the guest, then Rhino will automatically update the meeting with the guest's response, then delete the message from the owner's inbox. If the e-mail contains a cancellation or a comment, the message stays in the inbox and is not deleted.

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## Rhino Processing

Exchange fires Rhino whenever a meeting message is delivered to a user's Inbox .

For **Replies** Rhino has four switches, three deletes for the message types (decline, accept, tentative), and one for the message-in-text body. This is by default turned ON.

For **Requests** Rhino has a switch to automatically accept requests as "Tentative" rather than as "No response." This is by default turned OFF.

Further options allow you to further process the Reply or Request by deleting it or not.

These actions can also be logged by Rhino.

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## Recurring Meeting Requests

Meeting recurrence patterns make no difference to Rhino.

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## Delegates for Meeting Requests

Rhino accepts and updates the owner's calendar even if the meeting was set up by a Delegate (on behalf of the owner), or receives all forwarded meeting requests (for example, an Administrative Assistant).

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## Outlook Web Access

Rhino will correctly accept and update calendars on either Microsoft Outlook or in Outlook Web Access. We have not specifically tested all versions of Macintosh Outlook clients, or Linux third-party clients, but have so far seen no problems from the field.



# Planning an Rhino Deployment

To install Rhino, you must create a domain account that has access to all mailboxes, including Send As / Receive As privileges.

Rhino must be installed on a back end Exchange Server.

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## Permissions

The User ID of the person installing Rhino must be in the Enterprise Domain Admin Group – they need to have permission to read/write to the Storage Groups and have Send As/Receive As permissions across all of your Exchange mailbox stores.

### To change the security credentials provided by the Component Object Model (COM+) application

1. To open **Component Services**, click **Start**, point to **All Programs, Administrative Tools**, and then click **Component Services**.
2. In the details pane, navigate to Rhino by expanding **Component Services, Computers, My Computer**, and then **COM+ Applications**.
3. Right-click **Rhino**, and then click **Properties**.
4. On the **Identity** tab, provide and confirm the new password according to your organization's security policies.

For more information about Component Services, see the Windows Help documentation.

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## Mailbox Issues

No known issues.

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## Processing Rules

No known issues with Processing Rules.

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## Alternate Clients

No known issues with Alternate Clients such as Entourage, Outlook Web Access (OWA), or Ximian Evolution.

# Evaluating before Deploying

Sumatra Development always recommends evaluating Rhino in a test environment before putting it on your production servers.

## The following test matrix can be used to evaluate Rhino

For your basic test environment, create a test domain with at least three users: TEST01, TEST02, TEST03 (obviously you can name them anything you want but we use variable names for clarity). Also create Ex\_Admin (your Exchange administrator)

Scenario	Organizer	Invitees	Responses	Desired Results
Basic meeting proposal with no delegation	TEST01	TEST02, TEST03	TEST02 accepts without comment TEST03 accepts with a comment	TEST02 – Tracking tab updated, no acceptance emails in Inbox or Deleted Items TEST03 – Response with comment left in Inbox.
Multiple clients with no delegation	TEST01	TEST02 (Outlook), TEST03 (OWA), Ex_Admin (Outlook, OWA)	TEST02 accepts without comment TEST03 accepts without comment Ex_Admin uses various accepts, declines, tentative accepts, with and without comments.	Only Declines, Accepts with comments, Tentatives with comments in Inbox, all blank accepts and tentatives update the Tracking tab – no residual blank accepts/tentatives in Inbox or Deleted Items folder
Meeting Proposal accepted by a Delegate	TEST01	TEST02 (Outlook), TEST03 (OWA), DELEGATE to TEST02), Ex_Admin (Outlook, OWA)	TEST03 – Accept w/o comment for both TEST02 and TEST03  Ex.Admin – Various declines, tentative, accept, with and w/o comment	Only Declines, Accepts w/comment, Tentatives w/comment are in Inbox, all blank accepts and Tentatives have updated the Tracking tab – no residual blank accepts/tentatives in Inbox or Deleted Items folder
Meeting Proposal created by Delegate	TEST02	TEST01, TEST03, Ex.Admin	TEST03 creates meeting from TEST02's calendar, accepts message to "update own calendar", other users responses are varied	Only Declines, Accepts w/comment, Tentatives w/comment are in Inbox, all blank accepts and tentatives have updated the Tracking tab – no residual blank accepts / tentatives in Inbox or Deleted Items folder

All items forwarded to Delegate	TEST02 (Outlook)	TEST01, TEST03 (OWA, Delegate to TEST02, TEST02 does not receive any meeting items, Ex_Admin	<p>Responses – TEST01 – accepts w/comment Ex.Admin – Various declines, tentative, accept, with and w/o comment</p> <p>TEST03 creates meeting from TEST02's calendar, accepts message to "update own calendar", other users responses are varied – all responses are autoforwarded by server rule to TEST03</p> <p>Responses – TEST01 – accepts w/o comment Ex.Admin – Various declines, tentative, accept, with and w/o comment</p>	Only Declines, Accepts w/comment, Tentatives w/comment are in Inbox, all blank accepts and Tentatives have updated the Tracking tab – no residual blank Accepts / Tentatives in Inbox or Deleted Items folder
Non-Standard Clients	TEST02 (Outlook)	TEST01, TEST03, Ex_Admin	TEST03 creates meeting from TEST02's calendar, other users responses are varied – all responses are autoforwarded by server rule to TEST03 from different alternate clients (OWA, Entourage, Evolution, etc.)	Only Declines, Accepts w/comment, Tentatives w/comment are in Inbox, all blank accepts and Tentatives have updated the Tracking tab – no residual blank Accepts / Tentatives in Inbox or Deleted Items folder



# Installing Rhino

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## Set-up Procedure

To set up Rhino:

1. **Create a directory.** For instance, f:\Sumatra\Rhino
2. **Copy** the installation files into that directory
3. **Edit the** RegRhino\_Config.xml file to point to that directory

Following is an example of a RegRhino\_Config.xml file.

```
<RegisterSink>
  <LogPath>f:\Sumatra\Rhino</LogPath>
  <LogFile>Register_Rhino.log</LogFile>
  <SinkType>Synchronous</SinkType>
  <txtMethods>OnSyncSave</txtMethods>
  <txtRegName>IncomingMtgInvite.snk</txtRegName>
  <txtEvtSink>Rhino.Rhino_Class</txtEvtSink>
  <txtPriority>15624</txtPriority>
  <txtCriteria>Where "DAV:contentclass" = 'urn:content-classes:calendarmessage' And
"DAV:ishidden" = FALSE And "DAV:isfolder" = False</txtCriteria>
  <txtScope>ANY</txtScope>
</RegisterSink>
```

4. **Register the DLL.** Use this command:  

```
regsvr32 f:\Sumatra\Rhino\Rhino.dll
```
5. In **Component Manager**, under your Server and under COM+, right click to **Create New Component**.
6. Call it **Rhino**.
7. A wizard will walk you through adding a **New Component Process**.
8. Go to **Properties** on the new Event.
9. Under **Security** – select **Enforce Security at Process Level Only**.

10. Under **Advanced** – select **Keep Running when Idle**.
11. Under **Transaction** – verify that **No Transactions** are selected.
12. Under the Rhino there should be a folder labeled **Component**. Right click this folder and select **Add New Component**. Select **Empty**. This invokes a Wizard that causes **Add** to come up. Select **Rhino** and click **Add**.
13. **Run RegisterSumatraRhinoEvent.exe** to register the Rhino.DLL
14. **Verify that the Register program found all storage groups and mail stores!**

### Verify that Rhino is registered as a COM+ component

1. Start **Component Services**.
2. Expand **Console Root, Component Services, Computers, My Computer**, and then click **COM+ Applications**.
3. In the details pane, verify that **Rhino** is present.
4. Open the Rhino log (default name is: `_Sumatra_Rhino.log`) and make sure you see “storeeventreg” entries. This logs that the event sink is registered on each system mailbox.

---

## Installing Rhino in a Clustered Environment

When you install Rhino in a clustered environment, you must consider the following:

- You must install Rhino on all nodes, although (obviously) it will only run on the active node. This is designed to operate should there be a fail-over condition.

## Uninstalling Rhino

### To uninstall Rhino

1. Return to the Component Services MMC.
2. Expand the Console Root until you’ve exposed Rhino.
3. Right click on Rhino and select **Disable**.
4. You can disable or delete (to completely remove) Rhino with options shown by right-clicking.

# Configuring Rhino

Rhino can be configured using these flags in the Rhino.XML configuration file.

NOTE: The configuration file is read every time the Rhino event sink fires, so once you modify the configuration file, the changes are automatically in effect.

**Table 4.1 Configuration settings in Rhino.xml**

XML Configuration values for the Sumatra Rhino Event Sink		
/SumatraEvent	Description	Default Value
/DATE_TIME_FORMAT	Format used when logging date/time	<b>mm/dd/yy hh:nn:ss AM/PM</b>
/LOGFILE	Logfile name	<b>_sumatra_Rhino.log</b>
/LOGPATH	Path where log file will be written	<b>F:\Sumatra\Rhino</b>
/LOGREPLY	Logs replies	<b>TRUE</b>
/LOGSUMATRAERRORS	Logs Sumatra sink trapped errors	<b>TRUE</b>
/LOGSUMATRAEVENTS	Log all transaction events (we recommend that you do NOT turn this on unless you're trying to debug the application or want to analyze statistics on use / effectiveness)	<b>FALSE</b>
/OWA_URL	Outlook Web Access URL	
/PERFORM_ERROR_LOGGING	Turn on all non-trapped error logging	<b>TRUE</b>
/PERFORM_FILE_LOGGING	Turn on file logging	<b>TRUE</b>
/DELETE_ACCEPTS	If True deletes Acceptance replies	<b>TRUE</b>
/DELETE_DECLINES	If True deletes Decline replies	<b>FALSE</b>
/DELETE_TENTATIVES	If True deletes Tentative acceptance replies	<b>TRUE</b>
/KEEP_REPLIES_WITH_MESSAGES	<p>If True, keeps replies in the Inbox that would normally be deleted if the reply contains a message from the meeting attendee</p> <p>NB: This supersedes the DELETE settings, so if this is TRUE any replies with a message will remain in the Inbox.</p> <p>We recommend you set this to TRUE, unless you are ABSOLUTELY SURE you want ALL messages with comments to the meeting chair to be deleted.</p>	<b>TRUE</b>

/AUTO_PROCESS_REPLIES	If True processes meeting request replies.	<b>TRUE</b>
/AUTO_PROCESS_REQUESTS	If True processes meeting requests.	<b>FALSE</b>
/DEFAULT_REQUEST_RESPONSE	Sets default meeting reply. Choices are Accept, Decline, Tentative	<b>TENTATIVE</b>
/DELETE_PROCESSED_REQUESTS	If True removes the item from the inbox.	<b>FALSE</b>
/REQUEST_BUSYSTATUS	Sets the free/busy status for the item. Choices are Free, Busy.	<b>BUSY</b>
/SKIP_PROCESSING_IF_MEETING_ONCALENDAR	Ignores Rhino processing if there is a meeting already on the calendar.	<b>TRUE</b>

---

## Corporate Time Users

To configure Rhino so that Exchange automatically:

- Accepts all invitations for all guests as Tentative
- Leaves all invitations in the Inbox

Configure Rhino with these options:

/AUTO_PROCESS_REQUESTS	If True processes meeting requests.	<b>FALSE</b>
/DEFAULT_REQUEST_RESPONSE	Sets default meeting reply. Choices are Accept, Decline, Tentative	<b>TENTATIVE</b>
/REQUEST_BUSYSTATUS	Sets the free/busy status for the item. Choices are Free, Busy, and Tentative.	<b>TENTATIVE (not the default)</b>

---

## Meeting Maker Users

The defaults as designed are similar to Meeting Maker behavior for responses and acknowledgements.

**Table 4.2 Configuration settings in RegRhino\_Config.xml**

XML Configuration values for the Registration of the Sumatra Rhino Event Sink		
/RegisterSink	Description	Default Value
/LogFile	Logfile name	<b>RegisterEvent.log</b>
/LogPath	Path where log file will be written	<b>f:\Sumatra\Rhino</b>
/SinkType	Sumatra event sinks are always synchronous	<b>Synchronous</b>
/txtCriteria	The "sql" selection criteria used to determine when the event sink will fire. If you're not sure what this means, then do NOT modify it.	<b>Where "DAV:contentclass" = 'urn:content-classes:calendarmessage' And "DAV:ishidden" = FALSE And "DAV:isfolder" = False</b>
/txtEvtSink	The classes defined by the Sumatra event sink dll	<b>SumatraEvent.SumatraEvent_Class</b>
/txtMethods	The methods implemented by the Sumatra event sink.	<b>OnSyncSave</b>
/txtPriority	The priority Exchange uses to determine when to fire the event sink. You may change this number from 0 to 64000. The lower the number, the higher the priority.	<b>15624</b>
/txtRegName	The name used to register (bind) the event sink to each system mailbox.	<b>IncomingMail.snk</b>
/txtScope	The scope of the query	<b>ANY</b>

Note:	You are encouraged to change values in green to meet your system requirements
	We recommended you leave values colored in yellow unchanged - unless you are an advanced user and understand the implications of your changes.

# Sample Configuration Files

The following is an example of a RegRhino\_Config.xml file.

```
<RegisterSink>
  <LogPath>F:\Sumatra\Code\Rhino\</LogPath>
  <LogFile>Register_Rhino.log</LogFile>
  <SinkType>Synchronous</SinkType>
  <txtMethods>OnSyncSave</txtMethods>
  <txtRegName>IncomingMtgInvite.snk</txtRegName>
  <txtEvtSink>Rhino.Rhino_Class</txtEvtSink>
  <txtPriority>15624</txtPriority>
  <txtCriteria>Where "DAV:contentclass" = 'urn:content-classes:calendarmessage' And
"DAV:ishidden" = FALSE And "DAV:isfolder" = False</txtCriteria>
  <txtScope>ANY</txtScope>
  <strServerName></strServerName>
  <txtDomainDNSName></txtDomainDNSName>
</RegisterSink>
```

The following is an example of a Rhino\_Config.xml file.

```
<Rhino>
  <LogPath>F:\Sumatra\Code\Rhino\</LogPath>
  <LogFile>_Sumatra_Rhino.log</LogFile>
  <LogSumatraEvents>True</LogSumatraEvents>
  <LogSumatraErrors>True</LogSumatraErrors>
  <LogReply>True</LogReply>
  <PERFORM_FILE_LOGGING>True</PERFORM_FILE_LOGGING>
  <PERFORM_ERROR_LOGGING>True</PERFORM_ERROR_LOGGING>
  <DATE_TIME_FORMAT>mm/dd/yy hh:nn:ss AM/PM</DATE_TIME_FORMAT>
  <OWA_URL></OWA_URL>
  <AUTO_PROCESS_REPLIES>True</AUTO_PROCESS_REPLIES>
  <DELETE_ACCEPTS>True</DELETE_ACCEPTS>
  <DELETE_DECLINES>False</DELETE_DECLINES>
  <DELETE_TENTATIVES>True</DELETE_TENTATIVES>
  <KEEP_REPLIES_WITH_MESSAGES>True</KEEP_REPLIES_WITH_MESSAGES>
  <AUTO_PROCESS_REQUESTS>TRUE</AUTO_PROCESS_REQUESTS>
  <DEFAULT_REQUEST_RESPONSE>Tentative</DEFAULT_REQUEST_RESPONSE>
  <DELETE_PROCESSED_REQUESTS>False</DELETE_PROCESSED_REQUESTS>
  <REQUEST_BUSYSTATUS>Tentative</REQUEST_BUSYSTATUS>
  <SKIP_PROCESSING_IF_MEETING_ONCALENDAR>True</SKIP_PROCESSING_IF_MEETING_ONCALENDAR>
</Rhino>
```

## Additional information

If you delete the XML config file, then re-register the event sink, you will see the standard defaults. If Sumatra adds additional parameters this is how you update the Rhino XML file for those new defaults.

Some other Event Sinks and applications (for instance a Sumatra Meeting Maker or Lotus Notes to Exchange migration) will insert Carriage Return – Line Feed (“CR/LF”) in the body of a meeting invitation reply. Rhino has been set to not leave CR/LF only-replies in the recipient’s Inbox.

# Event Log and Tracing

Rhino logs significant errors, warnings, and informational messages to the application event log using the event source name "Rhino".

The following conditions for Rhino handling of the meeting response based on the Exchange CDO iCalMsgMethod are reported in the log file.

Condition	Reports	Comments
Deleted -CalReply	messageReplyType	Rhino acknowledged and deleted the message
Deleted-MtgRequest		Deleted the meeting request from the user's inbox
ERROR_Fail	messageReplyType	An error condition has arisen, and Rhino failed to completely process the current message
Owner/Proxy_on_DiffServers	Owner's ServerName->Delegate's ServerName	Replies are going to the meeting owner's delegate, and they are on different back end Exchange servers
Owner_Has_Proxy	owner 's Alias -> Delegate's Alias	Replies are going to the meeting owner's delegate
Saved-CalRequest		Save the calendar request in the user's calendar.
Skipped -CalReply_Forward / Delegate	messageReplyType	Rhino did not process because Rhino looks at the meeting invite in the delegate's inbox calendar then skips the delegate and gets the meeting from the owner's calendar. Rhino then updates the calendar with the appropriate guest response.
Skipped -CalReply_Not_pos / Tent	messageReplyType	Rhino did not process because it was neither an acceptance nor a tentative acceptance
Skipped_CalReply_Contains_Msg	messageReplyType	Rhino did not process because the reply contains a message.
Skipped-CalReply_Pos Skipped-CalReply_Neg Skipped-CalReply_Tent Skipped-CalReply_Other	messageReplyType	Skipped this meeting reply type.
Skipped-MtgRequest-AlreadyInCalendar		Rhino did not process this meeting request because one with the same GUID is already present in the calendar.

In the above, messageReplyType takes on one of three values:

- |                                     |                                      |
|-------------------------------------|--------------------------------------|
| i. IPM.Schedule.Meeting.Resp.Pos,   | i.e., a meeting acceptance           |
| ii. IPM.Schedule.Meeting.Resp.Tent, | i.e., a tentative meeting acceptance |
| iii. IPM.Schedule.Meeting.Resp.Neg  | i.e., a meeting decline              |

# Generating Management Statistics from the log files

If you want to generate some stats from the log files, use `grep` (for old UNIX gurus) or search using a text-editor (such as NotePad). For example, if you want to find out how many messages were deleted, search for the following strings in the log file:

```
Deleted-CalReply-IPM.Schedule.Meeting.Resp.Pos  
Deleted-CalReply-IPM.Schedule.Meeting.Resp.Tent
```

Searching and counting on `Deleted- CalReply-IPM.Schedule.Meeting.Resp` will find all instances which Rhino has successfully responded to on behalf of an over-worked user.

Using the additional extensions will obviously allow you to search only for Tentatively accepted, and fully Accepted meeting requests respectively.

---

## What Next for Rhino Technology?

Rhino both streamlines the repetitive chore of setting up meetings and makes the underlying infrastructure more robust by removing the consequences of bad user behavior. As the technology has evolved so too has the potential to do this for both other specific Exchange-based applications and for other new business applications. If you have some additional uses you want to see the technology put to please feel free to contact Sumatra Development (on the web at <http://www.sumatra.com>).

# Troubleshooting Rhino

This chapter contains information to help you with troubleshooting issues that may arise when you use Rhino.

Thus far in the development of Rhino we've found few problems – if you find one let us know and we'll add it and its resolution here.




# Appendix





A P P E N D I X

# Sumatra Development



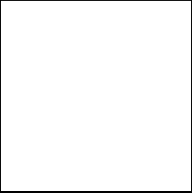
Zyg Furmaniuk and Russ Iuliano founded Sumatra Development LLC in 1999 with the idea to use their acknowledged expertise in calendaring and scheduling to produce products to meet the increasing demand for scheduling migrations and add-on capabilities.

Their first product, the Meeting Maker to Microsoft Exchange migration suite was built on their philosophy of creating products in response to customer demand.

As Microsoft developers, Sumatra has:

- Converted Meeting Maker to Exchange preserving all critical schedule attributes
- Created a Microsoft Project Add-in based on DRAG Eraser™ technology
- Created an Outlook add-in to correct PocketPC synchronization errors
- Created a tool to easily insert Holidays into all Outlook user calendars

Other products include:

- 
- Sumatra Utilities for Exchange: A tool that inserts holidays, verifies the integrity of meetings created in the Exchange 2000 / 2003 store, checks for double-bookings in resources, among other capabilities.
  - MigrationPro: One of the fastest ways to move email from iPlanet, or WebMail into Exchange.
  - Products for scheduling resources and managing proxies.
  - Rhino for streamlining meeting processes in Exchange.

Want something else?

If it involves calendaring, or an extension of the Rhino event sink technology to further streamline collaborative applications, tell us what you want!

The Managing Partners of Sumatra can be reached at:

[zyg@sumatra.com](mailto:zyg@sumatra.com)

[riuliano@sumatra.com](mailto:riuliano@sumatra.com)

Check us out at [www.sumatra.com](http://www.sumatra.com).