Documentation for

**EXCHANGE TROUBLESHOOTING**

*June 10, 2006*

---

**Table of Contents**

Carl Armstrong, LightSys Technology Services, Inc
Executive Summary

Lab 0: Lab Prep

LAB 1: Understanding the components of the Exchange Database.
    Database Files
    Transaction Logs
    How Transaction Logs Grow.
    How Transaction Logs are Cleared
    Backup Exchange with Native Tools
    Backup with File Level Backup

LAB 2: Exchange Recovery
    Specific Item
    Entire Mailbox
    Entire Database
    Talk about entire server

LAB 3: Exchange Best Practice Analyzer

Lab 4: Troubleshooting
    Mail Delivery
    Checking Queues
    DNS

Questions and Answers
LAB 0.

In this lab we are going to send an email using Outlook Web Access. This email will be restored later.

We will also configure Message Tracking for use later.

<table>
<thead>
<tr>
<th>On the desktop of the VM launch “Admin Console”</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Admin Console" /></td>
</tr>
</tbody>
</table>

We are not going to enable message tracking so messages will be logged.

**Expand “LAB (Exchange)”**

**Expand Servers**

**Right click on “LAB-SOURCE”**

**Select Properties.**
Check the boxes for "Enable Subject Logging and Display"

"Enable message tracking"

"Remove Log Files"

Set it to 45 days

Click OK.

Open up Internet Explorer and goto Local-Source/Exchange

When prompted enter Administrator

Error: Access is Denied.
<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Click on “New”</td>
<td></td>
</tr>
<tr>
<td>Enter User1 in the “To” field.</td>
<td></td>
</tr>
<tr>
<td>Give message a Creative Subject</td>
<td></td>
</tr>
<tr>
<td>Also Enter “User2” in the “To” field.</td>
<td></td>
</tr>
<tr>
<td>Also Enter “User3” in the “To” field.</td>
<td></td>
</tr>
<tr>
<td>Enter a Message body if you want</td>
<td></td>
</tr>
<tr>
<td>Click Send</td>
<td></td>
</tr>
<tr>
<td>Now Minimize OWA</td>
<td></td>
</tr>
</tbody>
</table>
LAB 1. Components of Exchange

In this lab we will learn what the different components are of an Exchange Information Store and how to back them up and restore them.

Browse to C:\program files \Exchsrvr \MDBDATA

<table>
<thead>
<tr>
<th>Name</th>
<th>Size</th>
<th>Type</th>
<th>Date Modified</th>
<th>Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDB0.chk</td>
<td>0 KB</td>
<td>Recovered File Program</td>
<td>6/3/2006 6:01 PM</td>
<td>A</td>
</tr>
<tr>
<td>EDB0.log</td>
<td>5,120 KB</td>
<td>Text Document</td>
<td>5/3/2006 6:51 PM</td>
<td>A</td>
</tr>
<tr>
<td>EDB000001.log</td>
<td>5,120 KB</td>
<td>Text Document</td>
<td>5/3/2006 5:47 PM</td>
<td>A</td>
</tr>
<tr>
<td>privl.edb</td>
<td>3,080 KB</td>
<td>EDB File</td>
<td>6/3/2006 6:51 PM</td>
<td>A</td>
</tr>
<tr>
<td>privl.sim</td>
<td>2,056 KB</td>
<td>STM File</td>
<td>6/3/2006 6:51 PM</td>
<td>A</td>
</tr>
<tr>
<td>publi.edb</td>
<td>3,080 KB</td>
<td>EDB File</td>
<td>6/3/2006 6:51 PM</td>
<td>A</td>
</tr>
<tr>
<td>publi.sim</td>
<td>2,056 KB</td>
<td>STM File</td>
<td>6/3/2006 6:51 PM</td>
<td>A</td>
</tr>
<tr>
<td>tmp.edb</td>
<td>1,032 KB</td>
<td>EDB File</td>
<td>6/3/2006 6:51 PM</td>
<td>A</td>
</tr>
</tbody>
</table>

In this directory are 4 different types of files

*.chk
*.log
*.edb
*.stm

*.EDB and *.STM

EDB – Normal Mail Content

Each Exchange database is made up of these two files. There are two databases.

- Private Information Store (Mailbox Database) (Priv1.*)
- Public Information Store (Public Folders) (Pub1.*)

These files automatically grow but do not shrink unless you compress them. Event ID 1221 will tell you how much space you will get back by compressing them.

*.LOG

Everything written to the Exchange Database is also written to a log file for performance and recovery purposes. (explain this more later)

As data comes into an Exchange Server it is written to the Log file first and then when there is a period of low system usage it writes the data into the Exchange Database.

*.CHK

This stores which log file information has been written into the database.
Now we are going to send a lot of email to the server and see how the files change size.

We are going to send 10 MBs of email to the server.

When the Executable finishes...

On the desktop double click on the icon “Send 10MB”

Open up the directory: Browse to `C:\programs Files\Exchsrvr\MDBDATA`

Compare the picture above the directory now. What has changed?

Now we are going to backup Exchange

Browse to `C:\programs files \Exchsrvr \MDBDATA`

<table>
<thead>
<tr>
<th>Name</th>
<th>Size</th>
<th>Type</th>
<th>Date Modified</th>
<th>Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>E00.chk</td>
<td>8 KB</td>
<td>Recovered File Frag...</td>
<td>6/3/2006 3:55 PM</td>
<td>A</td>
</tr>
<tr>
<td>E00.log</td>
<td>5,120 KB</td>
<td>Text Document</td>
<td>6/7/2006 6:22 PM</td>
<td>A</td>
</tr>
<tr>
<td>E000001.log</td>
<td>5,120 KB</td>
<td>Text Document</td>
<td>6/3/2006 5:47 PM</td>
<td>A</td>
</tr>
<tr>
<td>E000002.log</td>
<td>5,120 KB</td>
<td>Text Document</td>
<td>6/3/2006 8:49 PM</td>
<td>A</td>
</tr>
<tr>
<td>E000003.log</td>
<td>5,120 KB</td>
<td>Text Document</td>
<td>6/3/2006 9:49 PM</td>
<td>A</td>
</tr>
<tr>
<td>priv1.edb</td>
<td>3,080 KB</td>
<td>EDB File</td>
<td>6/7/2006 6:22 PM</td>
<td>A</td>
</tr>
<tr>
<td>priv1.stm</td>
<td>14,344 KB</td>
<td>STM File</td>
<td>6/7/2006 6:22 PM</td>
<td>A</td>
</tr>
<tr>
<td>pub1.edb</td>
<td>3,080 KB</td>
<td>EDB File</td>
<td>6/7/2006 6:22 PM</td>
<td>A</td>
</tr>
<tr>
<td>pub1.stm</td>
<td>2,056 KB</td>
<td>STM File</td>
<td>6/7/2006 6:22 PM</td>
<td>A</td>
</tr>
<tr>
<td>res1.log</td>
<td>5,120 KB</td>
<td>Text Document</td>
<td>6/3/2006 3:18 PM</td>
<td>A</td>
</tr>
<tr>
<td>tmp.edb</td>
<td>1,032 KB</td>
<td>EDB File</td>
<td>6/7/2006 6:22 PM</td>
<td>A</td>
</tr>
</tbody>
</table>

Notice the existence of the log files

Launch NT Backup Start, All Programs, Accessories, System Tools
Welcome to the Backup or Restore Wizard

This wizard helps you back up or restore the files and settings on your computer.

If you prefer, you can switch to Advanced Mode to change the settings used for backup or restore. This option is recommended for advanced users only.

Always start in wizard mode

To continue, click Next.

Backup or Restore Wizard

Backup or Restore
You can back up files and settings, or restore them from a previous backup.

What do you want to do?

- [ ] Back up files and settings
- [ ] Restore files and settings
Backup or Restore Wizard

What to Back Up
You can specify the items you want to back up.

What do you want to back up?

- All information on this computer
  Includes all data on this computer, and creates a system recovery disk that can be used to restore Windows in the case of a major failure.

- Let me choose what to back up

Backup or Restore Wizard

Items to Back Up
You can back up any combination of drives, folders, or files.

Double-click an item on the left to see its contents on the right. Then select the check box next to any drive, folder, or file that you want to back up.

Items to back up:

- Desktop
  - My Computer
  - My Documents
  - Microsoft Exchange Server
    - LAB-SOURCE
      - Microsoft Information Store
  - My Network Places

Name

- My Computer
- My Documents
- Microsoft Exchange Server
- My Network Places
Backup or Restore Wizard

Backup Type, Destination, and Name
Your files and settings are stored in the destination you specify.

Select the backup type:
File

Choose a place to save your backup:
C:\Documents and Settings\Administrator\My Documents\ Browse...

Type a name for this backup:
ExchangeDatabase

< Back Next > Cancel

Backup or Restore Wizard

Completing the Backup or Restore Wizard
You have created the following backup settings:

Name: C:\y Documents\ExchangeDatabases.bkf
Description: Set created 6/7/2006 at 6:28 PM
Contents: Selected files and folders
Location: File

To close this wizard and start the backup, click Finish.
To specify additional backup options, click Advanced...

< Back Finish > Cancel
LAB 2. Restoring Exchange

Now we are going to restore all of Exchange database.

In this section we are going to create an email and send it to one of the users. We are going to simulate an emergency by deleting the databases but not the log files. (It is assumed you keep the log files on a different Physical Partition.) The we will open up a user's mailbox and see the mail is still there.

Open up Internet Explorer and goto Local-Source/Exchange.
When prompted enter User2

Find message in inbox and do a reply to all.
Add something to the body so you will recognize the message later.
Click Send
Now close OWA.
Now we are going to delete the Exchange Databases.

<table>
<thead>
<tr>
<th>Open the Admin Console</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expand &quot;Computer Management.&quot;</td>
</tr>
<tr>
<td>Expand &quot;Services and applications&quot;</td>
</tr>
<tr>
<td>Expand &quot;Services&quot;</td>
</tr>
<tr>
<td>Click on &quot;Standard&quot;</td>
</tr>
<tr>
<td>Click on &quot;Microsoft Exchange Information Store&quot;</td>
</tr>
<tr>
<td>Right click and choose “Stop”</td>
</tr>
</tbody>
</table>

![Computer Management](image)

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device Manager</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Removable Storage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disk Defragmenter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disk Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Services and Applications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephony</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WMI Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indexing Service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DNS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet Information Server</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Logical Disk Manager Administrative Service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Messenger</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Microsoft Exchange Event</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Microsoft Exchange IMAP4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Microsoft Exchange Information Store</td>
<td>Manages t...</td>
<td>Started</td>
</tr>
<tr>
<td>Microsoft Exchange Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Microsoft Exchange MTA Stacks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Microsoft Exchange POP3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Microsoft Exchange Routing Engine</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Explore to C:\Program Files\Exchsrvr\MDBDATA

(We are going to make a flat file backup of Exchange databases at this time)

Right click on “MDBDATA” and choose “Edit” “Copy”

Now chose “Edit” “Paste”

It will create a folder called “Copy of MDBDATA”

| HARD DISK FAILURE | (Note this simulates a failure when you have the log files and database on separate physical partitions.) |
Explore to C:\Program Files\Exchsrvr\MDBDATA

Delete the following files
Priv1.edb
Priv1.stm
Pub1.edb
Pub1.stm
Temp.edb

This is what the directory will look like when you are done.

Go back to the "Admin Console"

Expand "Computer Management."
Expand "Services and applications" Expand "Services"

Click on "Standard"
Click on "Microsoft Exchange Information"
<table>
<thead>
<tr>
<th>Store” Right click and choose “Start”</th>
</tr>
</thead>
<tbody>
<tr>
<td>On the desktop of the VM launch “Admin Console”</td>
</tr>
<tr>
<td>Expand “LAB (Exchange)” Expand Servers Right click on “LAB-SOURCE”</td>
</tr>
<tr>
<td>If there is a “Recovery Storage Group” Right click on it and delete it. Expand “First Storage Group” You will notice the two databases are not mounted.</td>
</tr>
<tr>
<td>Launch NT Backup Start, All Programs, Accessories, System Tools</td>
</tr>
</tbody>
</table>
Click Next

Select “Restore Files and Settings” and Next

Expand File-ExchangeDat...
Expand “Lab-Sourc…”
Then on the right hand side select: “Log Files” And “Mailbox Store”
Click Next.

Backup or Restore Wizard

Welcome to the Backup or Restore Wizard

This wizard helps you back up or restore the files and settings on your computer.

If you prefer, you can switch to Advanced Mode to change the settings used for backup or restore. This option is recommended for advanced users only.

☑ Always start in wizard mode

To continue, click Next.

Backup or Restore Wizard

What to Restore
You can restore any combination of drives, folders, or files.

Double click an item on the left to see its contents. Then select the check box next to any drive, folder, or file that you want to restore.

Items to restore:

<table>
<thead>
<tr>
<th>Name</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Files</td>
<td></td>
</tr>
<tr>
<td>Mailbox Store [La...</td>
<td></td>
</tr>
<tr>
<td>Public Folder Stor...</td>
<td></td>
</tr>
</tbody>
</table>

Click Next.
Select “Last Restore Set” and “Mount Database After Restore”
Click “Next”

Now we are going to look at the directory while the restore occurs.
Explore to C:\Program Files\Exchsrvr\MDBDATA

This is what the directory looked like before the restore.

![Directory Content]

<table>
<thead>
<tr>
<th>Name</th>
<th>Size</th>
<th>Type</th>
<th>Date Modified</th>
<th>Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>E00.chk</td>
<td>8 KB</td>
<td>Recovered File Frag...</td>
<td>6/9/2006 12:49 PM</td>
<td>A</td>
</tr>
<tr>
<td>E00.log</td>
<td>5,120 KB</td>
<td>Text Document</td>
<td>6/9/2006 12:49 PM</td>
<td>A</td>
</tr>
<tr>
<td>E00000005.log</td>
<td>5,120 KB</td>
<td>Text Document</td>
<td>6/7/2006 11:10 PM</td>
<td>A</td>
</tr>
<tr>
<td>res1.log</td>
<td>5,120 KB</td>
<td>Text Document</td>
<td>6/3/2006 3:18 PM</td>
<td>A</td>
</tr>
</tbody>
</table>

Compare the above picture to what it looks like now.
LAB 3: Exchange Best Practice Analyzer

In this lab we will use the Exchange Best practice analyzer to look at the Exchange environment and look for problems.

I am going to assume you can download it from Microsoft’s site and install it.

Launch the Exchange Best Practice Analyzer.

Normally we select check for updates, but we will not do it now.

Select “Do not Check…”

And “Go to Welcome Screen”

Updates and Customer Feedback

The following options control whether this tool will automatically check the Web for a newer version of the tool upon startup. Leave this enabled unless you are having repeated connection difficulties or are on a network. If this is disabled, you can still check for updates on demand using the “Updates and Customer Feedback” pane, or you can manually install updates. Instructions for manually installing updates can be found:

- Check for updates on startup (recommended)
- Do not check for updates on startup
- Check for updates now
- Go to Welcome screen
Welcome to the Exchange Server Best Practices Analyzer

This tool will examine a single Exchange server, all servers in an Administration Group, or all servers in a deployment. Configuration information will then be gathered and examined from several sources (for example, Active Directory, Windows registry, and the metabase) and verified for correctness.

When the gathering and analysis process is complete, a list of issues will be presented, arranged by severity. For each issue, the tool provides descriptions of what the problem is and how it can be fixed.

You can either begin a new scan at this point or examine a report of a scan already run.

- Select options for a new scan
- Select a Best Practices scan to view

Connect to Active Directory

The Exchange Server Best Practices Analyzer must have read access to Active Directory. By default the tool will use the currently logged-on account, and will automatically find and connect to a suitable global catalog server. The account the you are logged on with will also need administrator or equivalent access to each Exchange server.

If you are running the Exchange Server Best Practices Analyzer in a different domain or want to specify a different global catalog server for the tool to connect to, enter the fully qualified domain name (FQDN) of the global catalog server here:

Active Directory Server: [LAB-SOURCE]

To run the Exchange Server Best Practices Analyzer under different accounts, click “Show advanced login options.”

- Show advanced login options
- Connect to the Active Directory server
Start a New Best Practices scan

Enter an identifying label for this scan: ICCM-HealthCheck

Specify the scope for this scan:

- Lab
- First Administrative Group
- LAB-SOURCE

Summary:
Scope is set to 1 server(s), 1 administration group(s), and the organization.

Select all
Unselect all

Select the type of scan to perform:
- Health Check
- Permission Structure Check
- Connectivity Test
- Baseline

Health Check options:
- Performance Baseline (2 hours)

Scanning Completed

Scanning has completed successfully.

View a report of this Best Practices scan

Server scanning summary:

Total servers: 1 completed

First Administrative Group
LAB-SOURCE
Completed
This shows the critical alerts in the organization. Click one of the alerts for more information.

The Exchange Best practice analyzer is a great tool to look at your exchange environment. You can also do baselines.
LAB 4: Troubleshooting

In this lab we will use the Message Tracking to follow messages to see where they pass through the system.

Enter “Lab” and click “Check Name”  
Click “OK”
### SMTP Protocol Log

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Sender</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/9/2006</td>
<td>1:12 PM</td>
<td>User1</td>
<td>I need an Extra Day</td>
</tr>
<tr>
<td>6/9/2006</td>
<td>1:13 PM</td>
<td>User1</td>
<td>test</td>
</tr>
<tr>
<td>6/9/2006</td>
<td>1:08 PM</td>
<td><a href="mailto:User1@Lab.Local">User1@Lab.Local</a></td>
<td>Will Stay in Queue</td>
</tr>
</tbody>
</table>
Extra Items

Section 1 Using Recovery Storage Groups to recover an individual message. (Warning the restrictions for this are very specific.)

SKIP down to Page 28. START HERE!!!

Open the Admin console from the desktop.

Minimize OWA

On the desktop Launch “Admin Console.MSC”

Expand “Lab (Exchange)”

Expand Servers

Expand Lab-Source

![Diagram of Admin Console with Lab-Source expanded]
Right Click on Server name and Chose "New" = "Recovery Storage Group"

Accept the Defaults and select "OK"
Right Click on “Recovery Storage Group” and select “Add Database to Recover”

Select Mailbox Store and click “OK”
Accept Defaults and Click “OK”

Launch NT Backup
Start, All Programs, Accessories, System Tools
Click Next

Backup or Restore Wizard

Welcome to the Backup or Restore Wizard

This wizard helps you back up or restore the files and settings on your computer.

If you prefer, you can switch to Advanced Mode to change the settings used for backup or restore. This option is recommended for advanced users only.

- [ ] Always start in wizard mode

To continue, click Next.

Select “Restore Files and...
Settings” and Next

Expand File-ExchangeDatabases

Expand “Lab-Sourc...”

Then on the right hand side select: “Log Files” And “Mailbox Store”

Click Next.

Select “Last Restore Set” and “Mount Database After Restore”

Click “Next”
<table>
<thead>
<tr>
<th>Setting Permissions for ExMerge</th>
<th>We are about to use ExMerge to recover the mailbox. The issue is we have to have the correct permissions for ExMerge to work. By default the Administrators and Domain Admins are “Denied” the “Send As” and “Receive As” right. We need to give this right back so ExMerge will work.</th>
</tr>
</thead>
<tbody>
<tr>
<td>When it is done it will display this message.</td>
<td>Click Close</td>
</tr>
<tr>
<td>Then Click “Finish”</td>
<td>Backup or Restore Wizard</td>
</tr>
<tr>
<td>Completing the Backup or Restore Wizard</td>
<td>You have created the following restore settings:</td>
</tr>
<tr>
<td>Restore from: ExchangeDatabases.bkf created 6/7/2006</td>
<td>Type: File</td>
</tr>
<tr>
<td>Restore to: Original locations</td>
<td>Existing files: Do not replace</td>
</tr>
<tr>
<td>To close this wizard and start the restore, click Finish.</td>
<td>To specify additional restore options, click Advanced.</td>
</tr>
<tr>
<td>Drive: LAB-SOURCE\Microsoft Information Store\First</td>
<td>Label: ExchangeDatabases.bkf created 6/7/2006 at 6</td>
</tr>
<tr>
<td>Status: Completed</td>
<td>Elapsed: 4 sec.</td>
</tr>
<tr>
<td>Time:</td>
<td>Files: 3</td>
</tr>
<tr>
<td>Processed:</td>
<td>Bytes: 23,089,512</td>
</tr>
</tbody>
</table>
Go Back to the “Admin Console”
Expand “Lab (Exchange)”
Expand Servers
Expand Lab-Source
Expand “First Storage Group”
Right Click on “Mailbox Store” and select Properties

Go to the Security Tab.
Click on “Administrator” and in the window on the bottom scroll all the way to the end.
You will notice “Send As” and “Receive As” have an inherited Deny.
This must be overridden for Exmerge to work.
So Click “Advanced”
Click “Add”

To view more information about special permissions, select a permission entry, and then click “Edit.”

Permission entries:

<table>
<thead>
<tr>
<th>Type</th>
<th>Name</th>
<th>Permission</th>
<th>Inherited From</th>
<th>Apply To</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allow</td>
<td>LAB-SOURCE$ (LAB...)</td>
<td>Full control</td>
<td>Parent Object</td>
<td>This object and sub...</td>
</tr>
<tr>
<td>Deny</td>
<td>Exchange Domain S...</td>
<td>Receive As</td>
<td>Parent Object</td>
<td>This object and sub...</td>
</tr>
<tr>
<td>Deny</td>
<td>Domain Admins (LAB...)</td>
<td>Receive As</td>
<td>Parent Object</td>
<td>This object and sub...</td>
</tr>
<tr>
<td>Deny</td>
<td>Domain Admins (LAB...)</td>
<td>Send As</td>
<td>Parent Object</td>
<td>This object and sub...</td>
</tr>
<tr>
<td>Deny</td>
<td>Enterprise Admins (LAB...)</td>
<td>Receive As</td>
<td>Parent Object</td>
<td>This object and sub...</td>
</tr>
<tr>
<td>Deny</td>
<td>Enterprise Admins (LAB...)</td>
<td>Send As</td>
<td>Parent Object</td>
<td>This object and sub...</td>
</tr>
<tr>
<td>Deny</td>
<td>Administrator (LAB...)</td>
<td>Receive As</td>
<td>Parent Object</td>
<td>This object and sub...</td>
</tr>
<tr>
<td>Deny</td>
<td>Administrator (LAB...)</td>
<td>Send As</td>
<td>Parent Object</td>
<td>This object and sub...</td>
</tr>
</tbody>
</table>

Unchecked: Allow inheritable permissions from the parent to propagate to this object and all child objects. Include these with entries explicitly defined here.

Type in “Exmerge” and “Check Names”

NOTE!!!! Use ExMerge instead of Administrator.
Select Administrator and "OK"

Click OK Again to get to the Permissions screen again.

<table>
<thead>
<tr>
<th>Matching names:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name (RDN)</td>
</tr>
<tr>
<td>Administrator</td>
</tr>
<tr>
<td>Administrators</td>
</tr>
</tbody>
</table>

Scroll all the way to the bottom.

Select "Receive As" And "Send As"

Scroll to the top and select "Administer Information Store"

Click "OK" Twice
You will notice now there are "Explicit" permissions for the "Send As" and "Receive As".
Click "OK".

| **Copy ExMerge Files to the Exchange Directory** | To get Exmerge to run you have to copy it to the same directory where the Exchange BIN files are located.
| | 1. Copy the contents of C:\ExMerge to C:\ProgramFiles\EXCHSRV\BIN |
| **Logout of the window** | 
| **Log back in as ExMerge Same password** | 
| **Start ExMerge by double clicking on exmerge.exe from the BIN directory** | to C:\ProgramFiles\EXCHSRV\BIN\ExMerge.exe |
Click Next

For time purposes we are going to do a “One Step Procedure”

Where the data will be extracted and imported in a single step. Usually you do the “Two Step Procedure”

Click Next

Enter “LAB-Source” into the Exchange Server Name field

Click Next.

To set the Destination Server.

Enter “LAB-Source” into the Exchange Server Name field

Click Next.
To Set the database to be used as the source select “Recovery....”

Click Next.