



BMERS V 6.2 Software Installation Guide

U.S. National Library of Medicine (NLM)

Disaster Information Management Research Center (DIMRC)

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Introduction

This document describes the steps necessary to install and configure the software components of the BHEPP Military Affiliate Radio System (MARS) Emergency Radio-email System (BMERS) version 3.0. BMERS was developed by the U.S. National Library of Medicine's Disaster Information Management Research Center (DIMRC) for the Bethesda Hospitals' Emergency Preparedness Partnership (BHEPP) as a backup email system during disasters. It is envisioned that BMERS can be useful in other settings where emergency, resilient Internet email capabilities may be needed.

The BHEPP hospitals have a resilient, private network that links the Hospital Command Centers (HCCs) together via laser beams and fiber optics links. BMERS leverages this private hospital network and digital amateur radio technology to provide the BHEPP hospitals with resilient email communications when the Internet becomes unavailable to the hospitals and over a large surrounding geographical area. This radio-email system uses the Winlink 2000 (WL2K) system (<http://www.winlink.org>), which was developed by Amateur Radio Safety Foundation (ARSF) volunteers and is available to amateur and MARS licensed radio operators for sending and receiving Internet email via radio communications. BMERS greatly extends the WL2K model by allowing multiple Emergency Operations Center staff to communicate via Internet email from multiple locations via the same radio station, which can be operated by a single licensed radio operator, during a disaster situation. BMERS implements a local area network to give users access to the email capabilities using a standard web browser. Users are assigned BMERS-specific, role-based email addresses within the BMERS network.

The current version of the BMERS software can be installed on a standard MS Windows-based PC. Using BMERS also requires amateur radio equipment compatible with the Winlink 2000 system. As of August 2015, the BMERS software has been tested only on Microsoft Windows XP (SP2/SP3), Windows Server 2008, and Windows 7 (SP1), 8.1 (32-bit and 64-bit) Operating Systems. For more details, visit the BMERS website at <http://www.nihrac.org/home/bmers>.

The BMERS Software Distribution

The DIMRC BMERS software can be obtained in a ZIP file (DIMRC-Radiomail-6.x.x.zip) from <http://www.nihrac.org/Resources>.

The BMERS software includes a customized version of *Afterlogic Webmail Lite PHP* version 6.5. The Afterlogic Webmail Lite PHP is an open source version of a commercial product (<http://www.afterlogic.com/webmail-client>) that provides a browser-based email and collaboration front end. Note that a license key was required for the *Mailbee Webmail Pro v4.2* product included with earlier versions of the BMERS software, but beginning with BMERS Version 2.0 a license key is no longer required.

Other Included Third-Party Software Products

BMERS also makes use of the following third-party products, and these product's specific versions have been tested & included in BMERSSetup.exe

- *XAMPP (Apache Friends) (versions 1.7.4 V6 included in BMERS Setup)*

XAMPP (<http://www.apachefriends.org/en/xampp.html>) is an easy-to-install Apache distribution containing MySQL, PHP and Perl. BMERS uses only the Apache HTTPD, MySQL and PHP components.

- *hMailServer (hMailServer.com) (version 5.3.3 included in BMERS Setup)*

hMailServer (<http://www.hmailserver.com/>) is a free email server for Microsoft Windows that supports the common email protocols (IMAP, SMTP and POP3).

- *Ajax Chat (<http://frug.github.io/AJAX-Chat/>) (version 0.8.7 included in BMERS Setup)*

- *Paclink (Winlink.org) (with version 4.3.4.0 included in BMERS Setup)*

Paclink (<http://www.winlink.org/ClientSoftware>) controls the radio equipment and handles the transfer of email via radio and the Winlink 2000 system. It provides a POP/SMTP server to allow interfacing with email clients and related email applications. It uses the B2F message transfer protocol that supports attachments, multiple addresses, and tactical addresses.

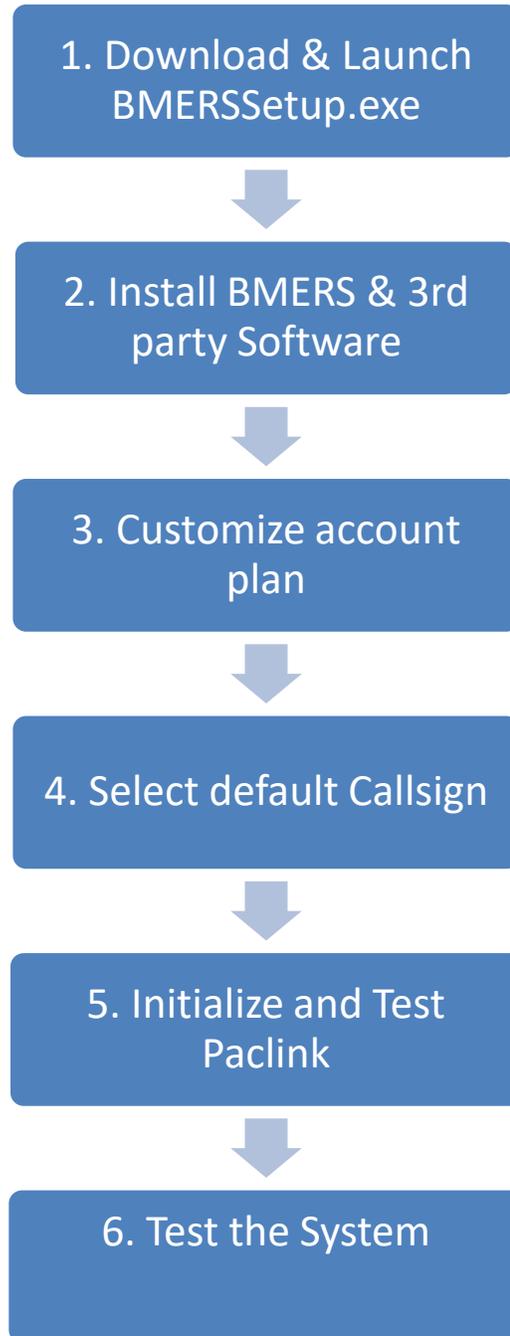
- *RMSEXPRESS (Winlink.org) (tested with version 1.4.3.0)*

Third-Party Software Products not included but can be used with BMERS

RMSEXPRESS (<http://www.winlink.org/ClientSoftware>) controls the radio equipment and handles the transfer of email via radio and the Winlink 2000 system.

Installation Process Overview

The steps required to install the BMERS software must be executed in strict sequence. Every step is described in detail in the next section of this document, but they are summarized below. It is recommended that the computer running the BMERS system is dedicated to this purpose, as BMERS' software components could conflict with other applications running in your computer.



Prerequisites

The following resources are required for installing the BMERS software:

- A (dedicated) computer with Windows Server 2008, 2012, Windows XP SP3, Windows 7 (SP1), or Windows 8.1 installed and configured with the latest security patches. The installation instructions include operating-system-specific information. Windows XP systems require Microsoft .NET v3.5 runtime with SP1 installed.
- A MARS and/or amateur (ham) radio callsign. This generally means that you must be a licensed amateur radio or MARS radio operator.
- A Pactor radio modem and driver software (e.g., SCS PTC-IIusb). You may obtain the required driver from <http://www.scs-ptc.com/downloads/usb-driver-for-scs-ptc-iusb-and-scs-dsp-tnc>. If you have a SCS PTC-IIusb radio modem, installation instructions for Windows XP can be found in Section 3.2 of the PTC-IIusb Manual (<http://www.scs-ptc.com/downloads/ptc-iusb-manual/releases/4.0/manual40usb.pdf>).
- The latest version of the DIMRC BMERS software.
- An user account/email address plan:
 - Pick a domain name for your BMERS installation. This domain name will be used only internally in your own private local area network, which will be implemented around your radio station for your local users. It is recommended that this domain name does NOT match a valid, registered domain name, since otherwise the BMERS email server may not work properly if it is accidentally, or purposely, connected to the Internet (e.g., a potential domain name for your network could be “MyEmergency1.net”).
 - Define a list of user account names. These account names combined with your chosen domain name form the email addresses of your users on BMERS. It is recommended that email account names correspond to staff positions in the served organization’s Emergency Operations Center, such as standard staff positions defined in the Incident Command System. For example, a potential user account for an Incident Commander at a hospital could be “Hosp1-IC@MyEmergency1.net”. BMERS is provided with a template account plan file that can be optionally modified to suit your local needs.

Additional details are provided in the next sections of this document. Again, please read this Installation Guide fully before attempting to install the BMERS software.

Detailed Installation Steps

The instructions below will assume that the default values of installation settings (especially installation directories) are used unless stated otherwise. They will further assume that all of the steps are executed while logged on in your computer as an Administrator (that is, you are using a Windows user account that is part of the Windows Administrator group). It will also be assumed that you are using a computer dedicated to running BMERS, and that you are fairly familiar with the process of installing and configuring software in your computer.

When using a 64-bit Windows systems, any mention in this guide of the 'C:\Program Files' directory should be replaced by 'C:\Program Files (x86)'.

1.0 Download & Launch BmersSetup.exe

The DIMRC BMERS software can be obtained in a ZIP file (DIMRC-Radiomail-6.x.x.zip) from <http://www.nihrac.org/Resources>. Download this zip file and extract all contents to a directory on your local machine then launch BmerSetup.exe as an **Administrator**.

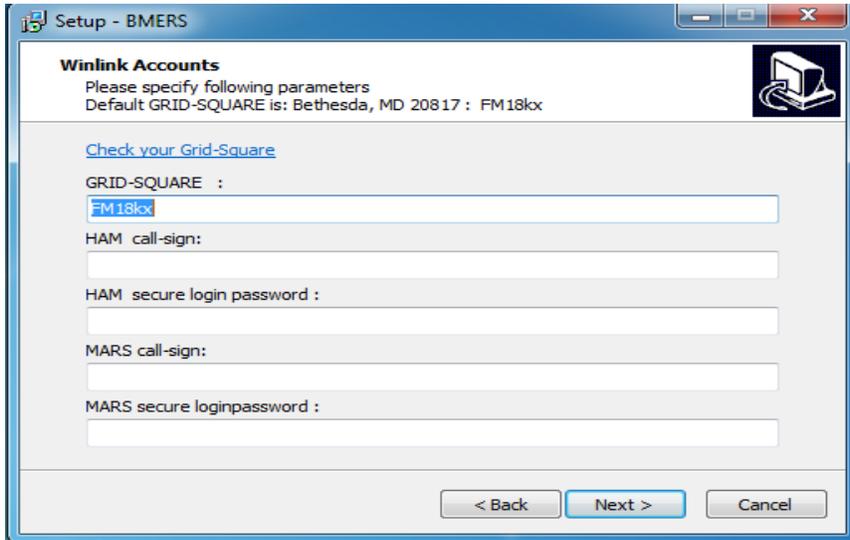
2.0 Install BMERS & 3rd Party Software

The following steps explain how to install BMERS & 3rd party software.

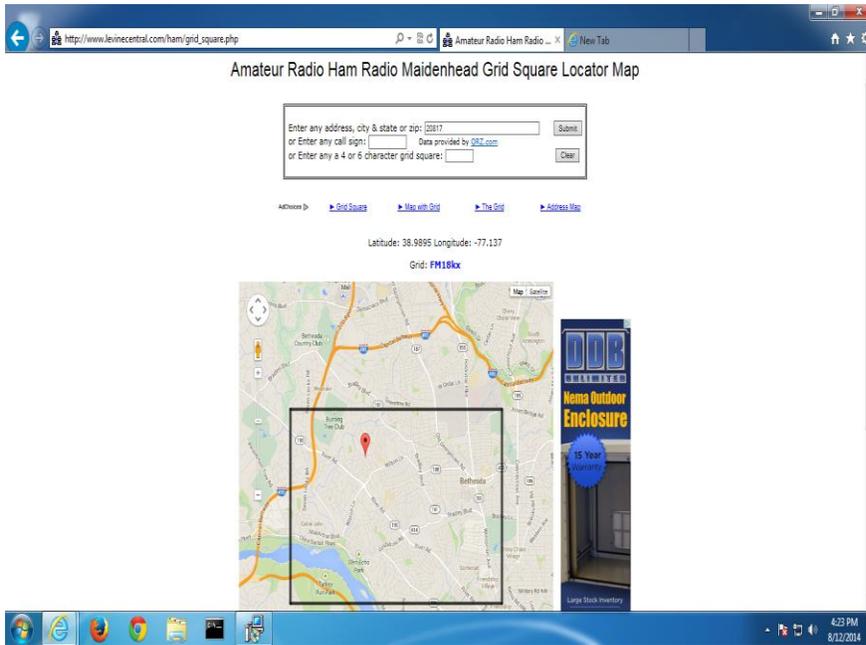
(Paclink is automatically installed by BMERS Setup without any user input).

Some of the pages (i.e. welcome, license, release notes, program folder name, etc.) has been omitted from this documentation.

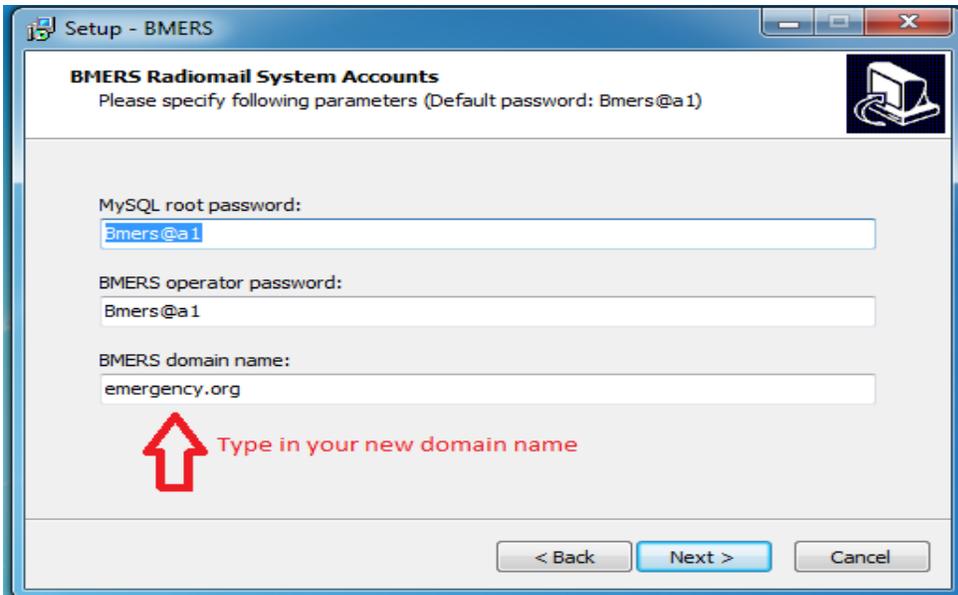
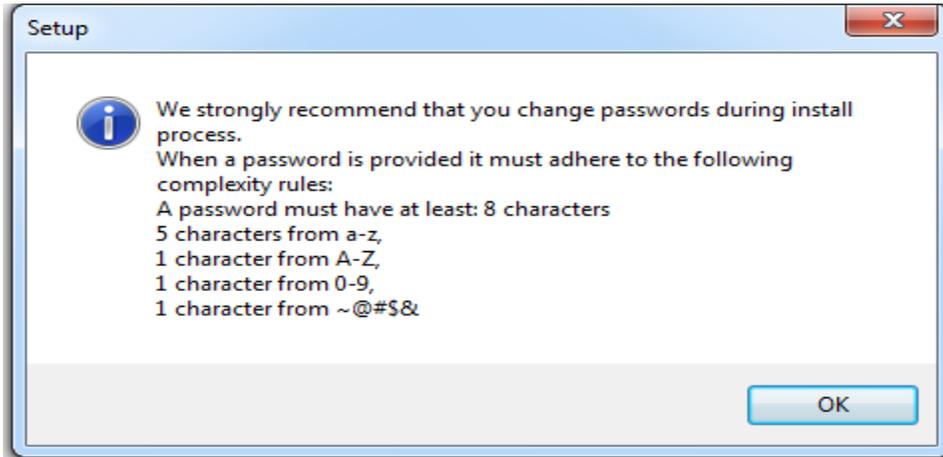
Winlink Accounts Information:



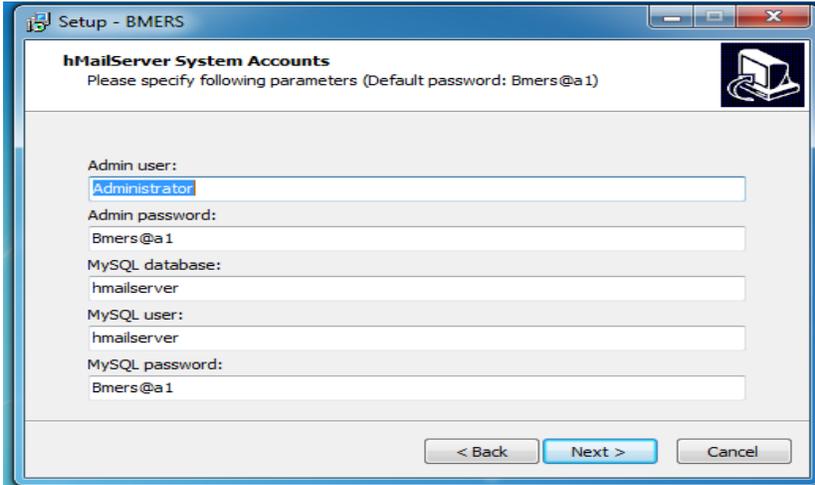
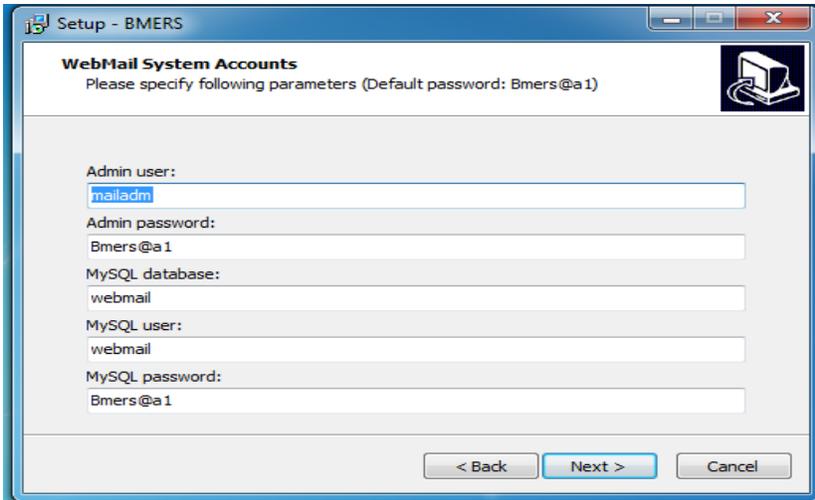
Either HAM and/or Mars Winlink Account information must be entered in order to establish a radio connection. If you don't know your Grid-Square, you can obtain it by clicking on the link ([Check your Grid Square](#)) provided on the BMERS Setup screen. Once you are on the Grid Locator Page (http://www.levinecentral.com/ham/grid_square.php), you can get your Grid-Square information by providing city, state, zip or your callsign.



UserName & Passwords:

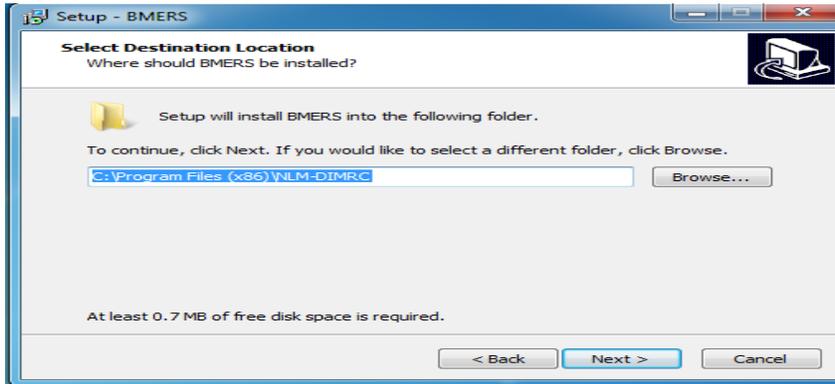


These are BMERS setup default username & passwords provided for convenience. **We strongly recommend changing these passwords.** BUT, at the same time we strongly ***recommend keeping the default usernames for all programs.*** Please remember the passwords you enter here, because same passwords will be used for MySQL & HmailServer programs. You can also assign a new domain name at this time.

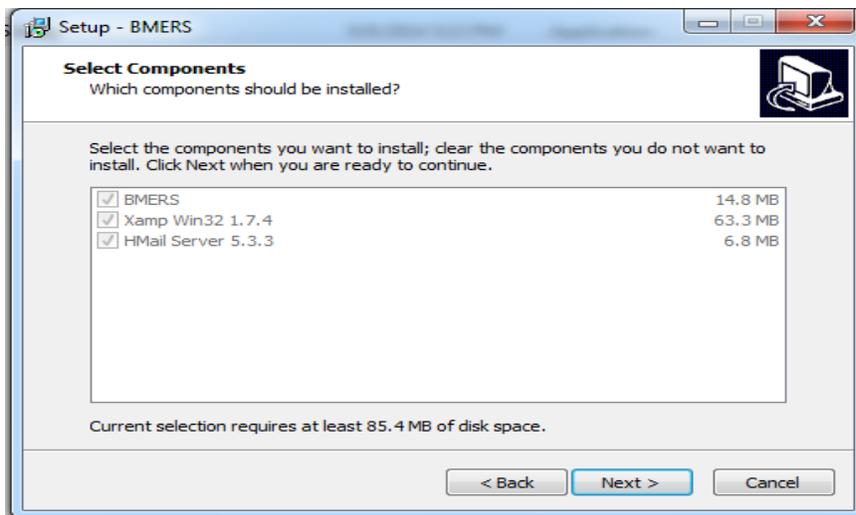


As we have included in the setup program assigning same password (or easy to remember pattern) for all installed programs will simplify administration tasks in an emergency situation.

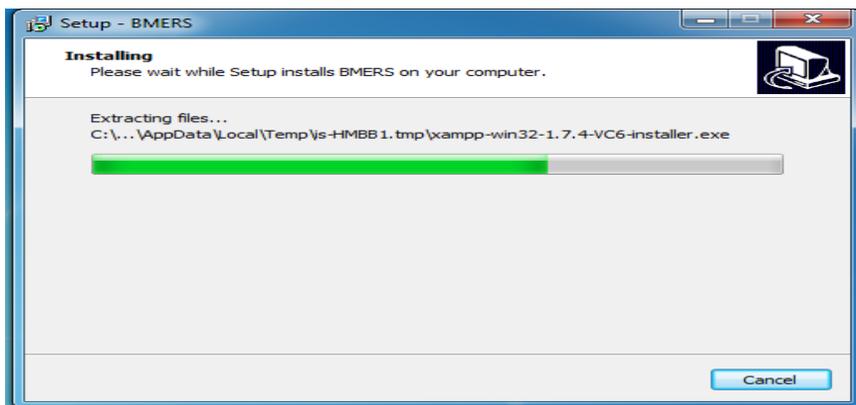
Program Destination: We strongly recommend keeping the default destination folders for all programs.



Component selection: will be done automatically based on the 3rd party software installed or not-installed on the computer. If the 3rd party software already installed, it will not be listed under components as an option. If you would like to reinstall any of the 3rd party software please uninstall first.



Installation progress:



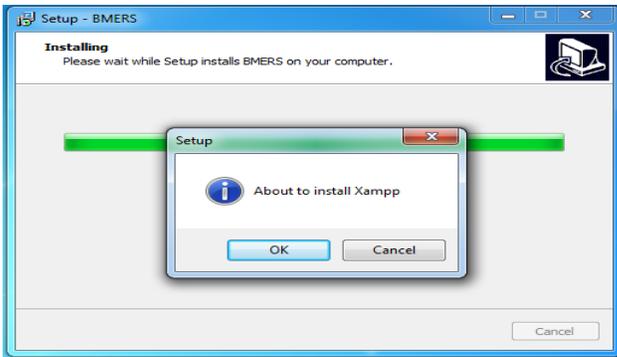
2.1 Install XAMPP

The following steps explain how to install the XAMPP software package. BMERS requires MySQL, Apache HTTPD and PHP, which are all provided by XAMPP.

Windows 7 Note:

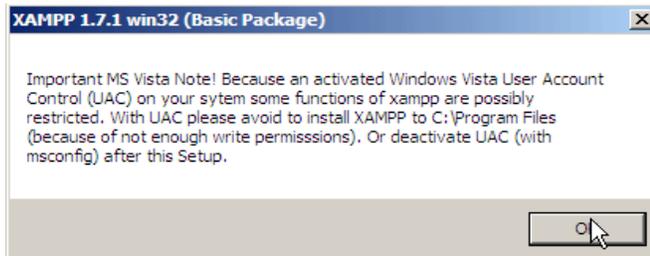
Open the Services panel and check to see whether Windows Remote Management Service or Worldwide Web Publishing Service are running. If so, these services (which listen on port 80) must be set to manual and stopped; otherwise XAMPP's Apache service will not start.

BMERS Setup will prompt you for the Xampp Installation.



Windows Server 2008 and Windows 7:

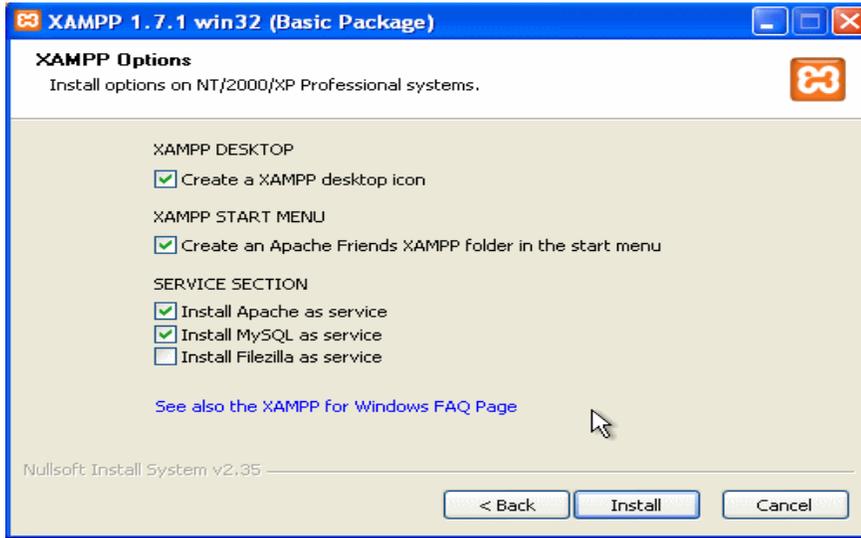
The following warning about Windows Vista User Access Control (or UAC) will be displayed:



Windows Server 2008 and Windows 7: (cont.)

Click OK and proceed to install in the default location (when possible, or another location not affected by UAC). After the installer has started, you will be asked for XAMPP installation options. Check 'Install Apache as a service' and 'Install MySQL as a service':

After the installer has started, you will be asked for XAMPP installation options. Check 'Install Apache as a service' and 'Install MySQL as a service'



Windows XP:

When asked if you want to keep blocking program "Apache HTTP Server", select "Unblock".



Windows 7:

If you see the error “XAMPP Component Status Check Failure ... Run this program only from your XAMPP root directory”, you may modify the start shortcut as follows:

Right-click on the shortcut and select **Properties**.

In the **Shortcut** tab, change the “Start In” value to “C:\Windows\System32”.

(Optional) In the **Compatibility** tab, check the box next to “Run this program in compatibility mode for” and select “Windows XP (Service Pack 2)”. Note: Although Apache Friends claims Windows 7 (32-bit) support for XAMPP v1.7.3+, the Windows Troubleshooter recommends the Service Pack 2 setting be used if problems are encountered during the program operation.

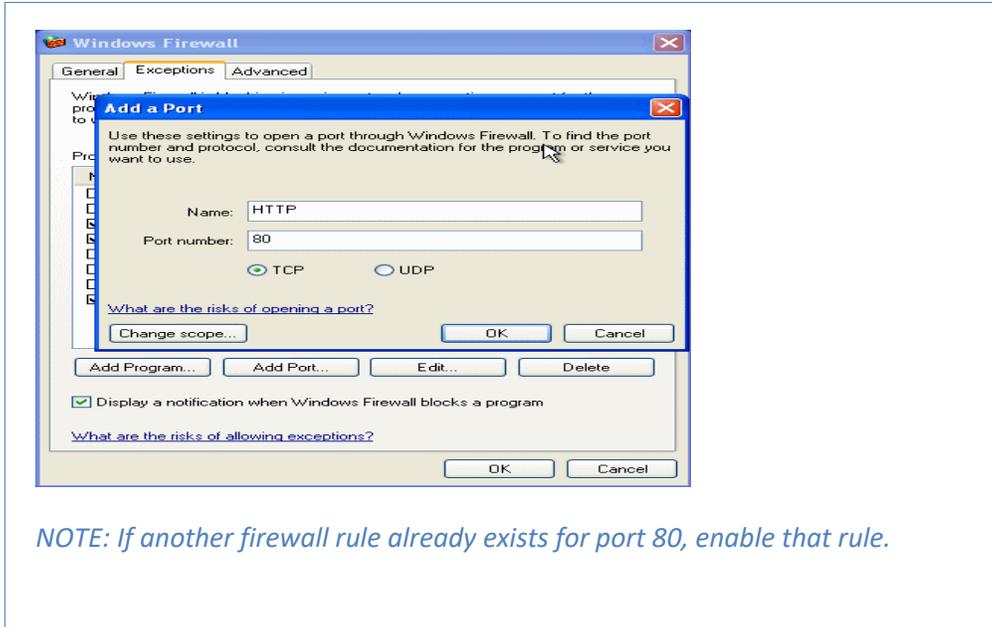
Windows XP:

- Open the Windows Firewall Control Panel (Start > Control Panel > Windows Firewall) and select the Exceptions tab.
- Click ‘Add Port ..’ and use the following values:

Name: HTTP (actual name is not relevant for proper functioning)

Port number: 80

- (Optional) Change Scope ... and Select ‘My network (subnet) only’ or provide a list of IP-addresses in Custom List.
- Click OK (Twice).



NOTE: When using another firewall program, make sure it allows (at a minimum incoming) traffic on port 80.

Windows 7:

Open the Windows Firewall Control Panel (Start > Control Panel > System & Security > Windows Firewall); then click [Allow a Program Through Firewall](#).

See <http://maximumpcguides.com/windows-7/allow-a-program-through-the-windows-7-firewall/> for details of how to allow Incoming Port 80 access.

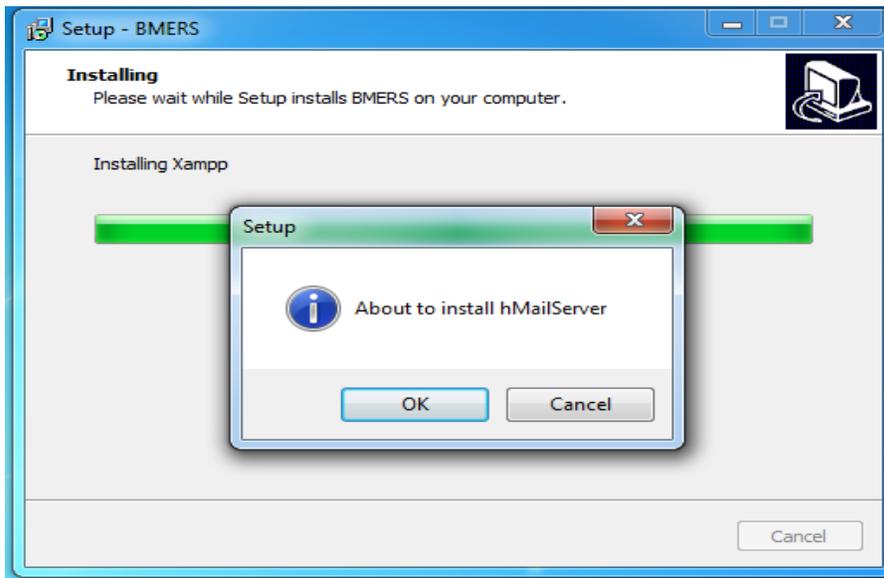
1.3 (Optional) Test by opening a browser (preferably on another computer on your network, in order to verify the firewall allows outside access to web applications). Browse to `http://<ip-address or computer name or use localhost>`. You should see the XAMPP splash page (`/xampp/splash.php`):



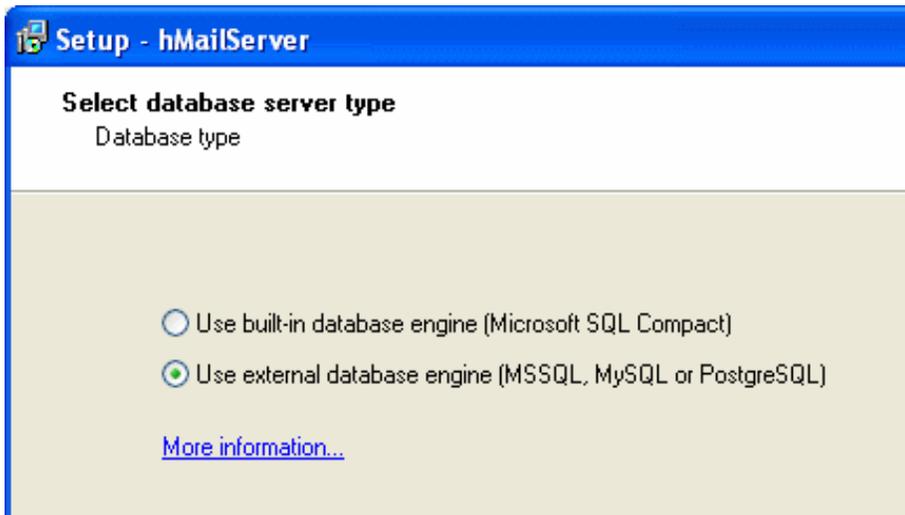
[English](#) / [Deutsch](#) / [Français](#) / [Nederlands](#) / [Polski](#) / [Italiano](#) / [Norwegian](#) / [Español](#) / [中文](#) / [Português \(Brasil\)](#) / [日本語](#)

2.2 Install hMailServer

BMERS Setup will prompt you for the hMailServer Installation.



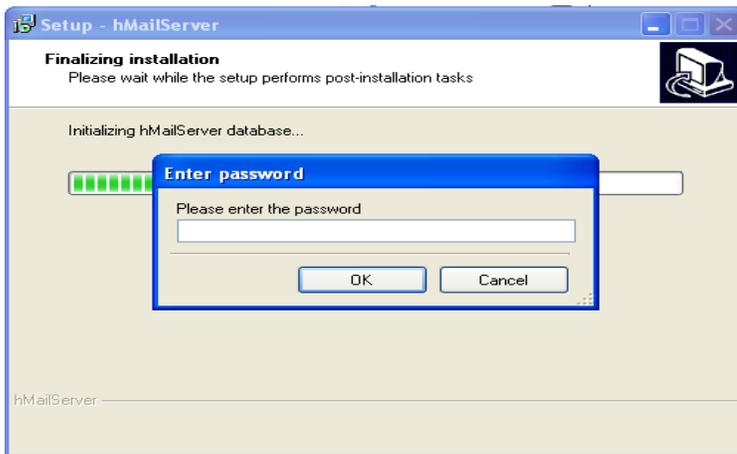
After reading the License Agreement, select “I agree to the agreement” and then select a “destination location”. We recommend keeping the default value “Program Files\hMailserver”. Accept the default “Full Installation” on the screen that asks ‘Select Components screen by clicking “Next>”. Select a database server type of “Use external database engine...”.



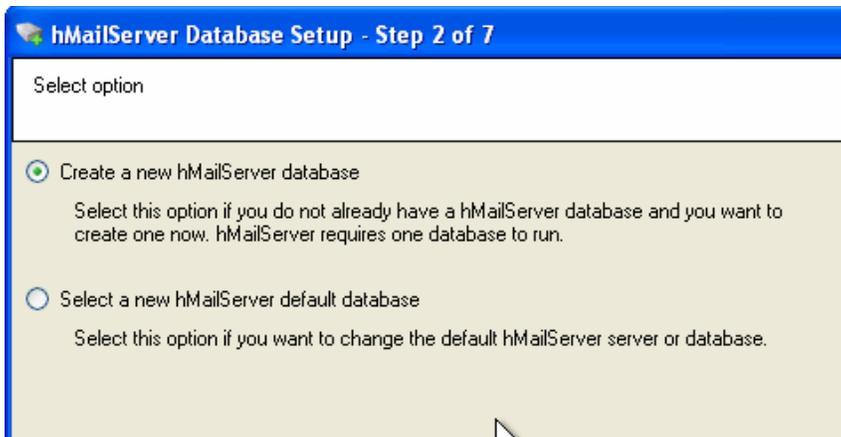
Click “Next “ on the next two screens to continue and, finally click “Install”.

Click “Next” to continue with the database wizard.

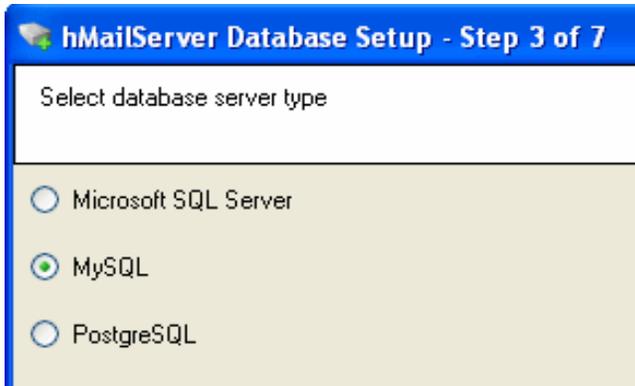
Enter the password for the hMailServer administrator (same password entered earlier on the BMERS Setup hMailServer System Accounts Page) and click “OK”.



Select “Create a new hMailServer database“:



On the “Select database server type” window, select “MySQL”.



- Enter server connection information: **(you must use the same values entered on the BMERS Setup hMailServer System Accounts Page)**
- Database server address: localhost
- Port: 3306 (keep default)
- Database name: The default is "hmailserver".
- Authentication/Username: The default value is hmailserver
- Authentication/password:

hMailServer Database Setup - Step 4 of 7

Enter server connection information

Database server address: localhost Port: 3306

Database name: hmailserver

Authentication

Use server authentication

Username: hmailserver

Password: *****

Set hMailServer service dependency: Select mysql (mysql) for Service

hMailServer Database Setup - Step 5 of 7

Set hMailServer service dependency

If the hMailServer service is dependent on a database service running on this computer, it's recommended that you choose the database service below.

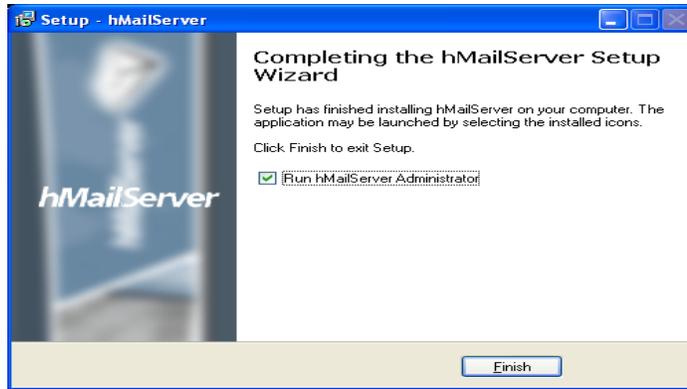
This will configure the hMailServer service to be dependent on the database service. Windows will then ensure that the database service is running before hMailServer is started.

Service: mysql (mysql)

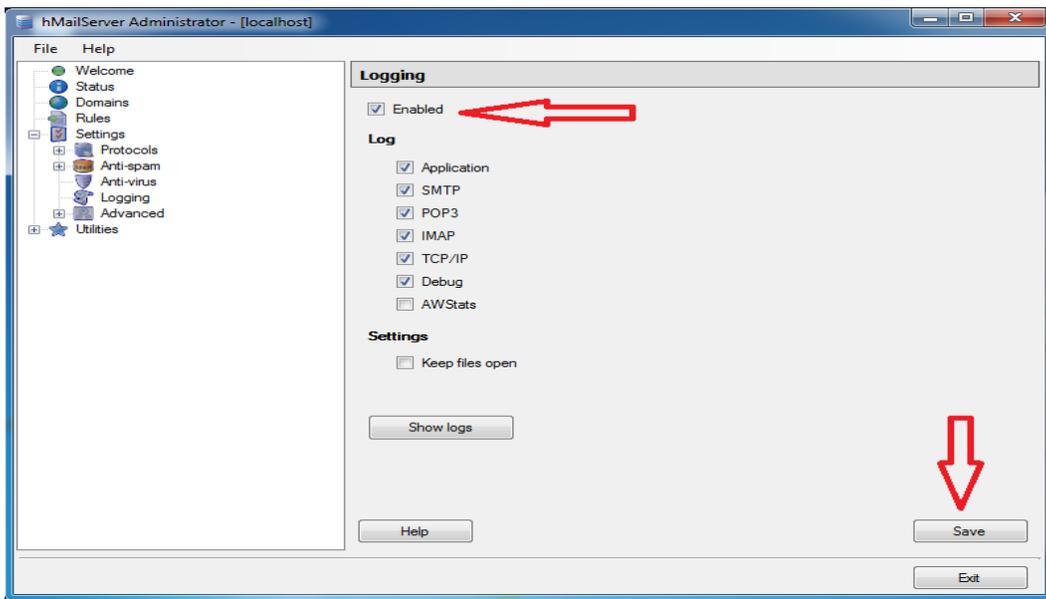
Click "Next" to create the database.

Click "Close" to continue.

In the completion dialog ensure that "Run hMailServer Administrator" is checked and click "Finish". (Note that the completion dialog may be hidden behind other windows. If so, use Alt-Tab to bring it to the foreground.)

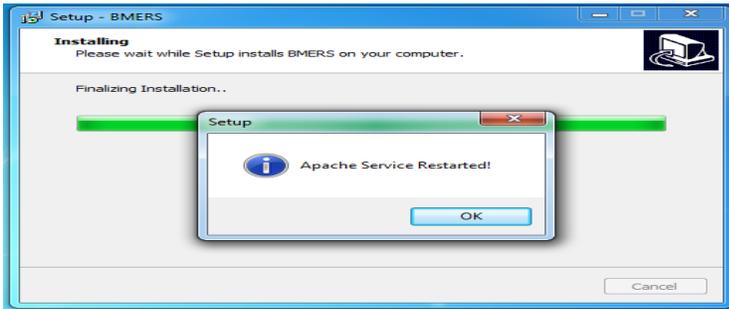


After a brief pause verify that the hMailServer Administrator application appears. The BMERS 'install.cmd' script will populate the Domains and Settings sections automatically, so no further entries need to be made at this time. (If a password prompt appears instead, re-enter the hMail Administrator password and refer to the troubleshooting section.)

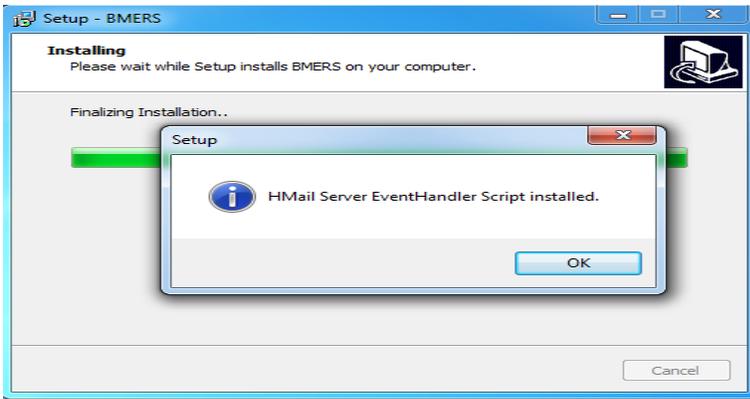


We recommend enabling logging under setting for future trouble shooting if needed. Click "Exit" to close the administrator program. (Optional) Pin 'Start > All Programs > hMailServer > hMailServer Administrator' to the Start Menu, for easy access.

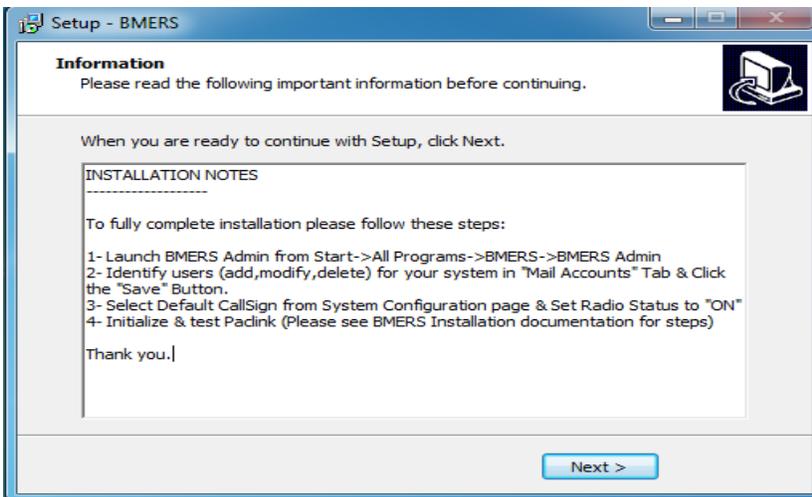
2.3 Apache Service will be ReStarted by BMERS Setup



2.4 hMailServer Script will be installed by BMERS Setup.

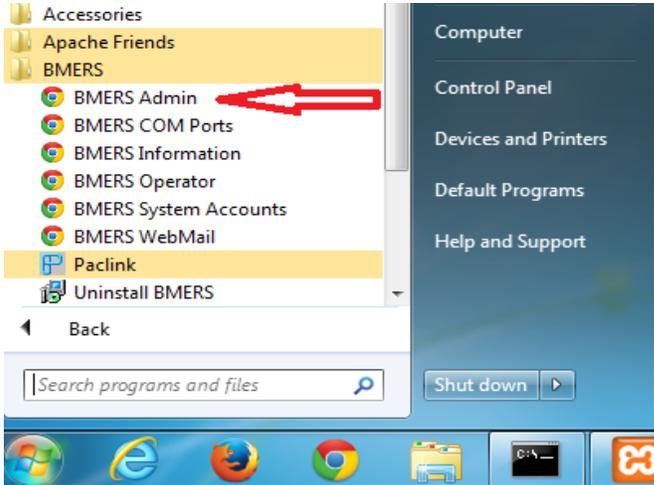


2.5 BMERS Setup ends with final installation notes



3.0 Customize the BMERS Account Plan

By launching BMERS Admin <http://localhost/operator/admin> or from the Windows Start->All Programs->BMERS->Admin customize the account plan.



Please wait until the login screen appears:



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3.1 Add, Modify or Delete Mail Accounts

You can add, modify or delete mail accounts in “Mail Accounts” tab.

NIH.GOV Radio Operator Application

System Configuration | Radio Message Queue | Radio Connections Log | Mail Server Status | System Administration [Logout](#)

System Administration

Mail Accounts | Winlink CallSigns | Current System Accounts | Reset/Backup/Restore BMERS | Configuration Logs

Mail Accounts

Load Accounts from XML File : No file chosen

Loading XML file is for Preview Only!.. You must click on Save to activate accounts in the XML file!

Name	Password	Privileged	Action
operator	Bmers@a1	<input checked="" type="checkbox"/>	Delete Row
ic-A	Bz~8PoWR	<input type="checkbox"/>	Delete Row
vip-A	Dr#3wXLC	<input checked="" type="checkbox"/>	Delete Row
dis-A	Hp-7hhpm	<input type="checkbox"/>	Delete Row
com-A	Es~2ZAs3	<input type="checkbox"/>	Delete Row
pio-A	lp-5Lfil	<input type="checkbox"/>	Delete Row
so-A	Xql2yfAa	<input type="checkbox"/>	Delete Row

NOTE ! Make sure to Save your changes by pressing on ‘SAVE’.
 Once the accounts are saved, notification will appear on the top of the page.

NIH.GOV Radio Operator Application

System Configuration | Radio Message Queue | Radio Connections Log | Mail Server Status | System Administration [Logout](#)

System Administration

Mail Accounts Updated!

Mail Accounts Database Backup has been completed!

Accounts Plan saved to :
 C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\back_2015-01-22_140433\radiomail-accountplan.xml

webmail Database Backup saved to :
 "C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\back_2015-01-22_140433\Webmail\webmail.sql"

Webmail Data Files saved to :
 C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\back_2015-01-22_140433\Webmail\data
 Hmailserver Database Backup saved to :
 "C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\back_2015-01-22_140433\HmailServer\hmailserver.sql"

HmailServer Data Files saved to :
 C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\back_2015-01-22_140433\HmailServer\Data

Padlink files saved to :
 C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\back_2015-01-22_140433\Padlink

Radio Logs saved to :
 C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\back_2015-01-22_140433/Logs

(DEL) Account : psi-A@nih.gov DELETED ! / Hmail record deleted.
 (DEL) Account : isl-A@nih.gov DELETED ! / Hmail record deleted.
 (DEL) Account : fasl-A@nih.gov DELETED ! / Hmail record deleted.
 (DEL) Account : ic-B@nih.gov DELETED ! / Hmail record deleted.
 (DEL) Account : vip-B@nih.gov DELETED ! / Hmail record deleted.
 (DEL) Account : dis-B@nih.gov DELETED ! / Hmail record deleted.

3.2 Bulk Load Mail Accounts into BMERS with an XML File.

XML File Format for upload:

```
<?xml version="1.0"?>
<domain>
  <account name="operator" isPrivileged="YES" password="Bmers@a1"/>
  <account name="ic-A" password="Qu!6NNSg"/>
  <account name="vip-A" isPrivileged="YES" password="Sd$48IEC"/>
  <account name="dis-A" password="Qg-8TT5D"/>
  <account name="com-A" password="He@4sG$W"/>
</domain>
```

- 1-Choose XML File to Upload
- 2-Load
- 3-Save (after making any necessary changes)



EMERGENCY.ORG Radio Operator Application

[Logout](#)

- System Configuration
- Radio Message Queue
- Radio Connections Log
- Mail Server Status
- System Administration

System Administration

Accounts Plan saved to:
 C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\back_2015-01-22_173238\radiomail-accountplan.xml

New XML Accounts File Uploaded

- Mail Accounts**
- Winlink CallSigns
- Current System Accounts
- Reset/Backup/Restore BMERS
- Configuration Logs

Mail Accounts



Load Accounts from XML File : No file chosen

Loading XML file is for Preview Only!.. You must click on Save to activate accounts in the XML file!

Name	Password	Privileged	Action
operator	Bmers@a1	<input checked="" type="checkbox"/>	Delete Row
ic-A	Qu!6NNSg	<input type="checkbox"/>	Delete Row
vip-A	Sd\$48IEC	<input checked="" type="checkbox"/>	Delete Row
dis-A	Qg-8TT5D	<input type="checkbox"/>	Delete Row
com-A	He@4sG\$W	<input type="checkbox"/>	Delete Row

3.3 Add, Modify or Delete Call-Signs.



NIH.GOV Radio Operator Application

[Logout](#)

- System Configuration
- Radio Message Queue
- Radio Connections Log
- Mail Server Status
- System Administration

System Administration

Accounts Plan saved to:
 C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\back_2015-01-22_140600\radiomail-accountplan.xml
 New XML Accounts File Uploaded

- Mail Accounts
- Winlink CallSigns
- Current System Accounts
- Reset/Backup/Restore BMERS
- Configuration Logs

Winlink CallSigns

Name	Mars	CallSignPassword	GridSquare	Action
AAN3NI	<input checked="" type="checkbox"/>	NIHRAC1	FM18kx	Delete Row
W3NIH	<input type="checkbox"/>		FM18kx	Delete Row
<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	FM18kx	Delete Row

Add Save Save

NOTE ! Make sure to Save your changes by pressing on 'SAVE'.
 Once the callsigns are saved, notification will appear on the top of the page.



NIH.GOV Radio Operator Application

[Logout](#)

- System Configuration
- Radio Message Queue
- Radio Connections Log
- Mail Server Status
- System Administration

System Administration

Call-Signs Updated!

CallSign Configuration Update
 Backup file created => C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\2015-01-22_140806-radiomail-callsigns.xml
 Padlink calsigns file created => C:\Program Files\NLM-DIMRC\Radiomail\Padlink\Configuration\Padlink-callsigns.xml
 Padlink .ini file => C:\Program Files\NLM-DIMRC\Radiomail\Padlink\Configuration\Padlink-AAN3NI.ini created.
 Padlink .ini file => C:\Program Files\NLM-DIMRC\Radiomail\Padlink\Configuration\Padlink-W3NIH.ini created.
 Padlink .ini file => C:\Program Files\NLM-DIMRC\Radiomail\Padlink\Configuration\Padlink-AAN3NA.ini created.
 Hmail Domain Deleted: winlink.org
 Hmail Domain Added: winlink.org
 AAN3NI => Hmail record added.
 W3NIH => Hmail record added.
 AAN3NA => Hmail record added.

3.4 Reset, Backup or Restore BMERS Data.

You can “Reset” to Initial Setup State, Backup or Restore BMERS data.

NOTE ! Reset & Restore will overwrite all existing data!

Prior to Reset & Restore, BMERS system will Automatically create a backup with a date & time stamp. Make sure to take a note of this Backup’s date & time so that you can revert (restore) to that particular date & time if needed.

NIH.GOV Radio Operator Application

System Configuration | Radio Message Queue | Radio Connections Log | Mail Server Status | System Administration [Logout](#)

System Administration

Mail Accounts | Winlink CallSigns | Current System Accounts | **Reset/Backup/Restore BMERS** | Configuration Logs

Reset / Backup / Restore BMERS

Reset BMERS to Initial Setup State (All users must exit from Webmail and Paclink)

Create BMERS Backup

Restore BMERS From Backups: (All users must exit from Webmail and Paclink)

Date	Time	Action
2015-01-22	14:06:00	Restore
2015-01-22	14:04:33	Restore
2015-01-22	14:03:15	Restore
2015-01-22	14:02:56	Restore
2015-01-22	13:56:48	Restore
2015-01-22	13:54:47	Restore
2015-01-22	13:54:13	Restore

3.4.1 Reset BMERS Data.

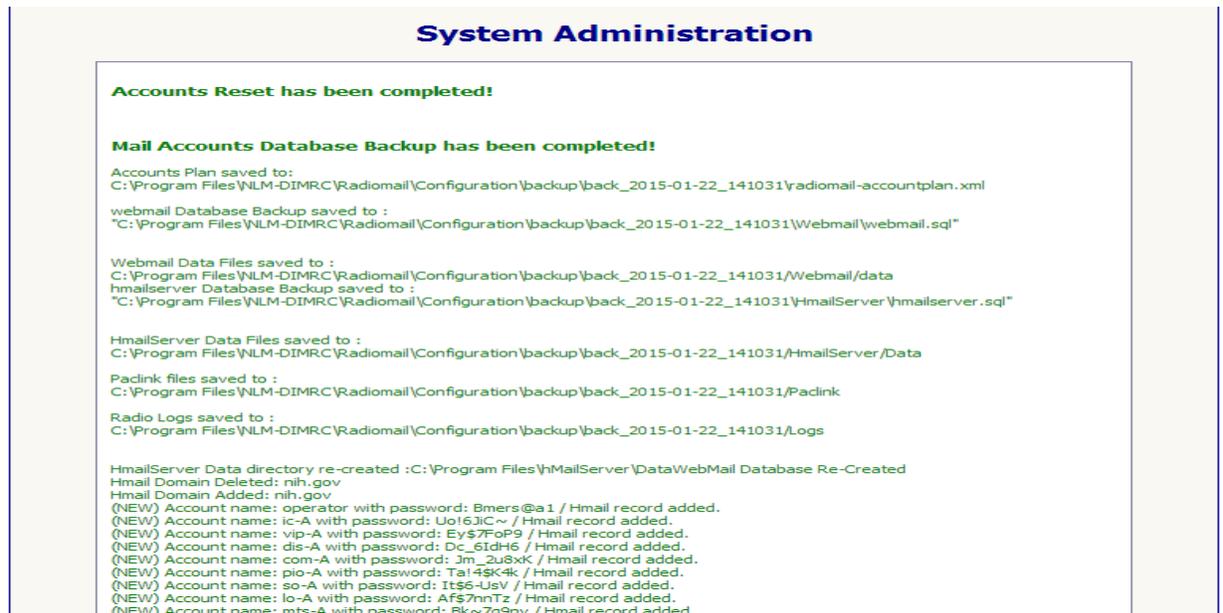
To “Reset”, click on the “Reset BMERS to initial Setup State”, and confirm the warning message.



Wait until the “reset” process is done.



Log will appear on top the page once the process is done. (You can see this and all other logs in the Configuration Logs tab.) Newly created backup just before the reset process will be listed in the log.



3.4.3 Backup BMERS Data.

Even though BMERS create a backup before each reset & restore, you may want to create a backup of the BMERS systems at mission critical time frames.

Simply click on the Backup button to create a new backup.

The screenshot shows a web interface with several tabs: 'Mail Accounts', 'Winlink CallSigns', 'Current System Accounts', 'Reset/Backup/Restore BMERS', and 'Configuration Logs'. The 'Reset/Backup/Restore BMERS' tab is active. Below the tabs, the heading 'Reset / Backup / Restore BMERS' is displayed. There are three main buttons: 'Reset BMERS to Initial Setup State (All users must exit from Webmail and Paclink)', 'Create BMERS Backup', and 'Restore BMERS From Backups: (All users must exit from Webmail and Paclink)'. The 'Create BMERS Backup' button is highlighted with a red box and a red arrow pointing to it.

Log will appear on top the page once the process is done. (You can see this and all other logs in the Configuration Logs tab.)



EMERGENCY.ORG Radio Operator Application

[Logout](#)

System Configuration

Radio Message Queue

Radio Connections Log

Mail Server Status

System Administration

System Administration

Mail Accounts Database Backup has been completed!

Accounts Plan saved to:

C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\back_2015-01-22_174818\radiomail-accountplan.xml

webmail Database Backup saved to :

"C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\back_2015-01-22_174818\Webmail\webmail.sql"

Webmail Data Files saved to :

C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\back_2015-01-22_174818\Webmail\data

hmailserver Database Backup saved to :

"C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\back_2015-01-22_174818\HmailServer\hmailserver.sql"

HmailServer Data Files saved to :

C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\back_2015-01-22_174818\HmailServer\Data

Paclink files saved to :

C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\back_2015-01-22_174818\Paclink

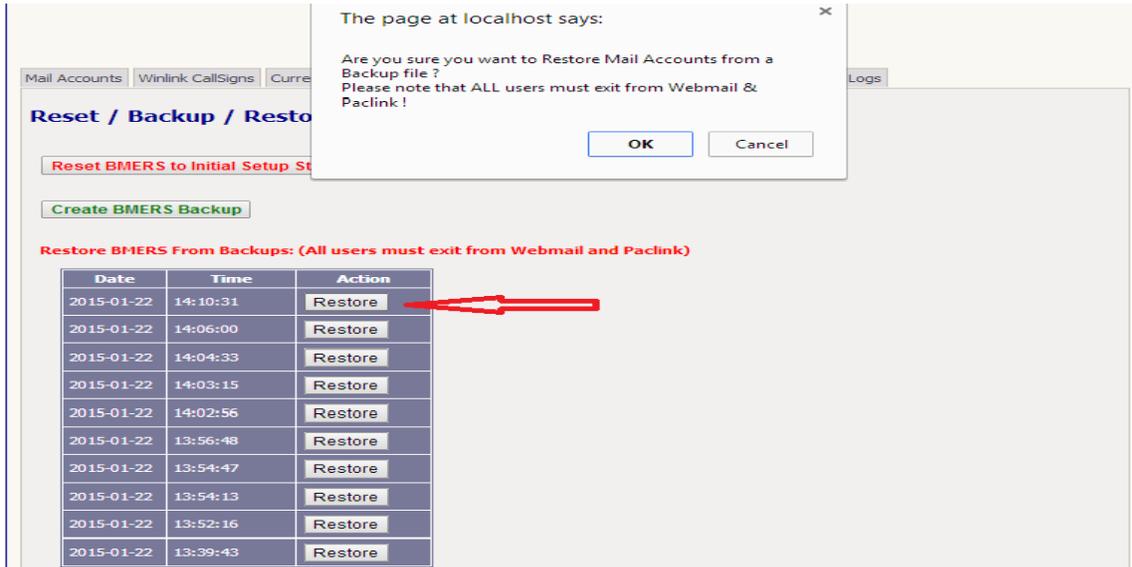
Radio Logs saved to :

C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\back_2015-01-22_174818/Logs

3.4.4 Restore BMERS Data from Backup Files.

You can restore (or revert) to any previously created BMERS Backup.

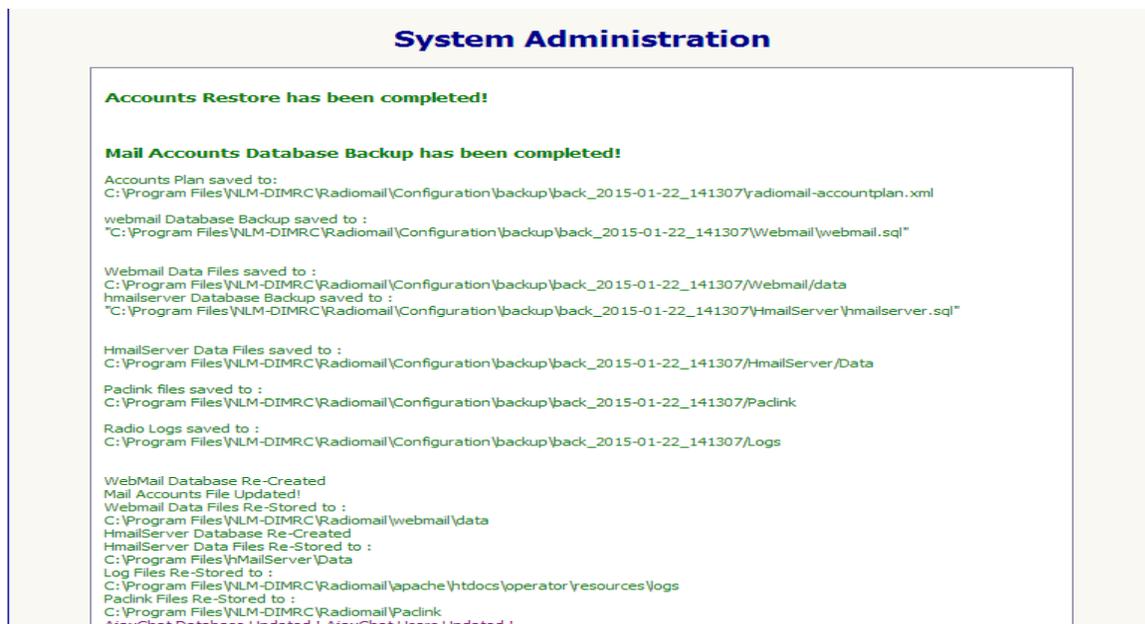
Simply select a desired date & time of the backup, click on the restore button, and confirm the warning message.



System Administration

Restoring BMERS from:
C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\back_2015-01-22_141031,
please wait...

Log will appear on top the page once the process is done. (You can see this and all other logs in the Configuration Logs tab.)



3.4.5 Configuration Logs.

Every Admin (Configuration) process will create logs and these logs can be accessed from “Configuration Logs” tab under Admin page. Log records are stored in descending chronological order.



NIH.GOV Radio Operator Application

[Logout](#)

- System Configuration
- Radio Message Queue
- Radio Connections Log
- Mail Server Status
- System Administration

System Administration

- Mail Accounts
- Winlink CallSigns
- Current System Accounts
- Reset/Backup/Restore BMERS
- Configuration Logs**

Configuration Logs

Accounts Restore has been completed!

Mail Accounts Database Backup has been completed!

Accounts Plan saved to:

C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\back_2015-01-22_141307\radiomail-accountplan.xml

webmail Database Backup saved to :

"C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\back_2015-01-22_141307\Webmail\webmail.sql"

Webmail Data Files saved to :

C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\back_2015-01-22_141307\Webmail\data

hmailserver Database Backup saved to :

"C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\back_2015-01-22_141307\HmailServer\hmailserver.sql"

HmailServer Data Files saved to :

C:\Program Files\NLM-DIMRC\Radiomail\Configuration\backup\back_2015-01-22_141307\HmailServer\Data

Radlink files saved to :

←

4.0 Select Default Call-Sign from the Configuration

Before the BMERS system can be used, default call-sign must be selected from the Configuration page. This process also applies to changing of call-signs.

1-Click on the change button.



2- Click on SELECT for the desired call-sign.



3-Click on “Show Radio as on”



Finished:



5.0 Initialize and Test Paclink and/or RMS Express.

Starting with BMERS version 6.0.2 RMS Express is also supported.

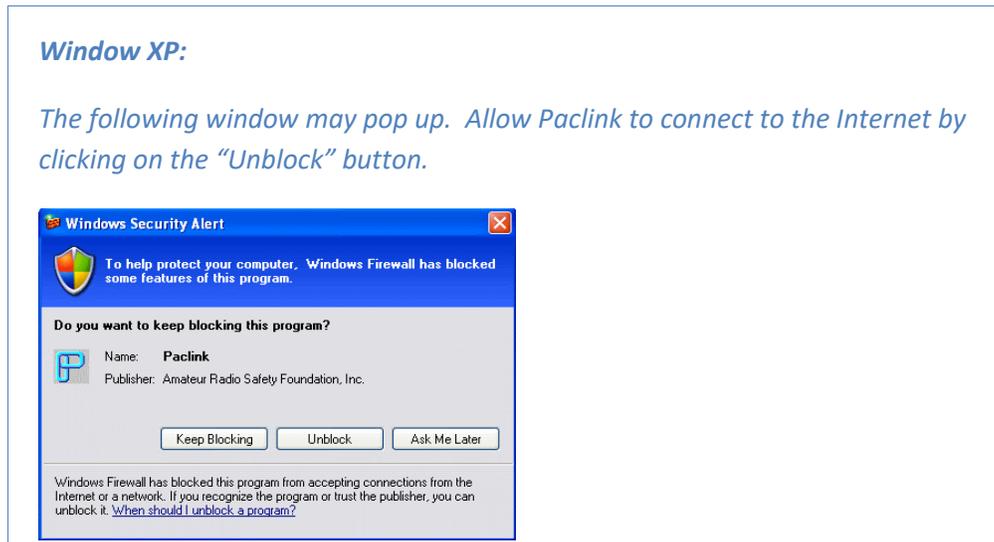
In order to use RMS Express with BMERS, RMS Express **MUST** be installed into its **default** installation directory of **C:\RMS Express**, and configured for each call sign.

NOTE: RMS Express help and download available from: <http://www.winlink.org/RMSExpress>

Since both RMS Express and Paclink will be using same ports for SMTP (9025) and POP3 (9110), **only one** of them can be active at any given time.

NOTE: Paclink Help file is available in: C:\Program Files (x86)\NLM-DIMRC\Radiomail\Paclink\Help directory.

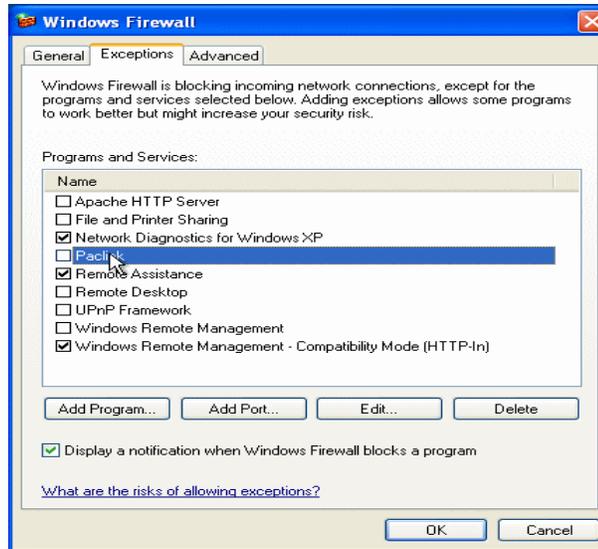
5.1 Run Paclink as Administrator from BMERS program group.



5.2 Update Channel list and create your TNC Channels as explained in Paclink Help File.

5.3 (Optional) Disable the Paclink firewall rule (Windows XP):

- 5.3.1 Open the Windows Firewall panel (Start > Control Panel > Windows Firewall).
- 5.3.2 Go to the Exceptions tab and find Paclink
- 5.3.3 Uncheck Paclink and click OK.

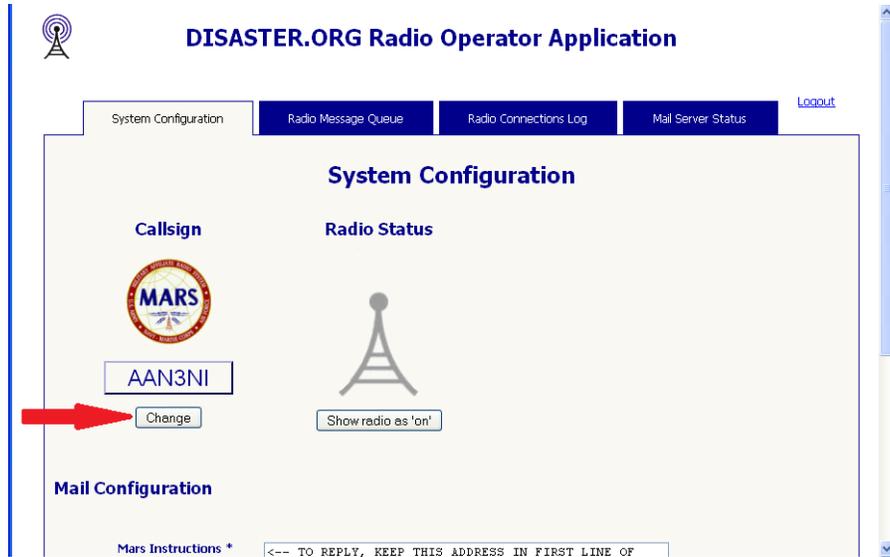


NOTE: If you want to test the system without an actual radio, you could re-enable this firewall rule, in order to allow Paclink to exchange messages with the Winlink2000 server via the Internet.

5.4 Configure Additional Call Sign accounts

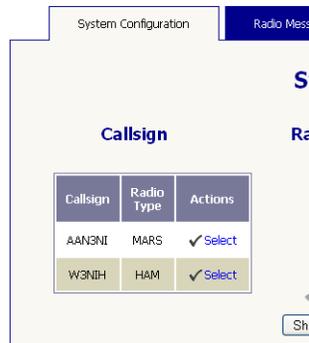
When you change the station call sign all components of the BMERS Radiomail system must be properly configured to reflect that change. The Radiomail Operator application provides you with the ability to use a single Paclink instance to support several call signs and takes care of all of the related housekeeping tasks in the background. Note that when you change call signs using the Operator application, the current Paclink configuration is saved in <PACLINK_HOME>\PacLink-<callsign>.ini.

Start the BMERS Radiomail Operator application by opening <http://localhost/operator> in your browser. Enter the password for the radiomail manager role (default username: operator) and click the 'Login' button. Upon successful login you will be presented with the System Configuration page. Notice that the currently configured call sign is displayed below an icon that indicates whether the call sign is for a MARS account or a HAM account.

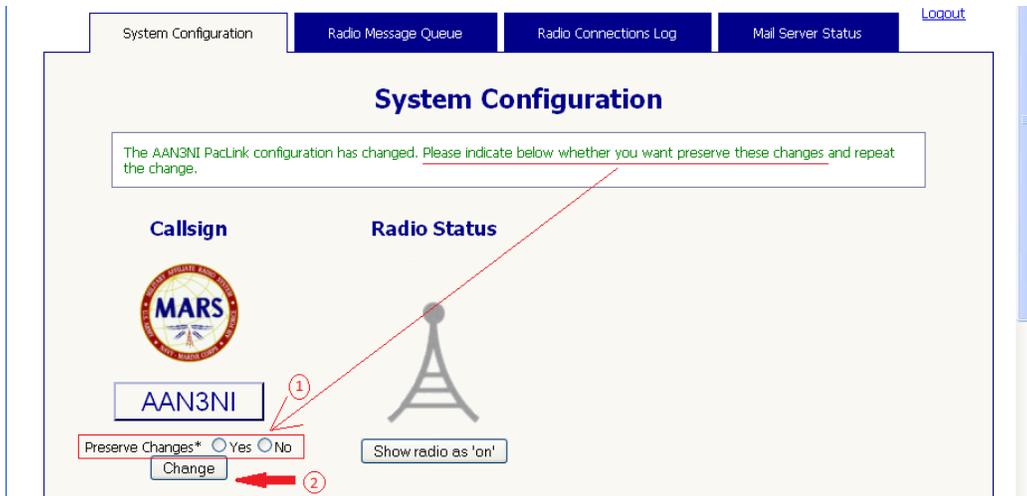


To switch to a different call sign:

- 5.4.1 Stop PacLink if you have not already done so. If PacLink is not stopped the application will issue an error message in the next step.
- 5.4.2 Click on the 'Change' button located below the call sign. You will be presented with a list of the call signs defined in your account plan.



- 5.4.2.1 Click on 'Select' in the Actions column for the new call sign after noting which call sign you are choosing. The page will display a message and a confirmation control, but the original call sign will still be displayed.



5.4.2.2 You must first click either the ‘Yes’ (to confirm the change) or ‘No’ (to cancel the change) radio button option, then click the ‘Change’ button. If you selected the ‘Yes’ option, the page should update to display the new call sign (and the appropriate MARS or HAM icon).



5.4.2.3 **IMPORTANT!** If the new call sign is associated with a different service (HAM or MARS) than the previous call sign you must update the PaLink channel list files.

- Navigate to the <PACLINK HOME>/data directory using the command line or Windows Explorer .
- Copy “<SERVICE> RMS Channels.dat” to “RMS Channels.dat” where <SERVICE> is the service (HAM or MARS) associated with the new call sign. If prompted that the destination file already exists, select the option to overwrite it.
- Similarly, Copy “<SERVICE> RMS VHF Channels.dat” to “RMS VHF Channels.dat”..

5.4.2.4 Restart PaLink and confirm that the newly selected call sign appears in the PaLink application’s frame title.

6.0 Test the System

6.1 Verify the operator application.

6.1.1 Log in as operator (point your web browser to <http://localhost/operator>) using the user id `operator` and the password you have chosen for the operator application (VALUE< radiomail-manager.password>).

6.1.1 Click on the “Radio Message Queue” tab and verify that no messages are shown.

6.1.2 Click on the “Mail Server Status” tab and verify that no messages are shown.

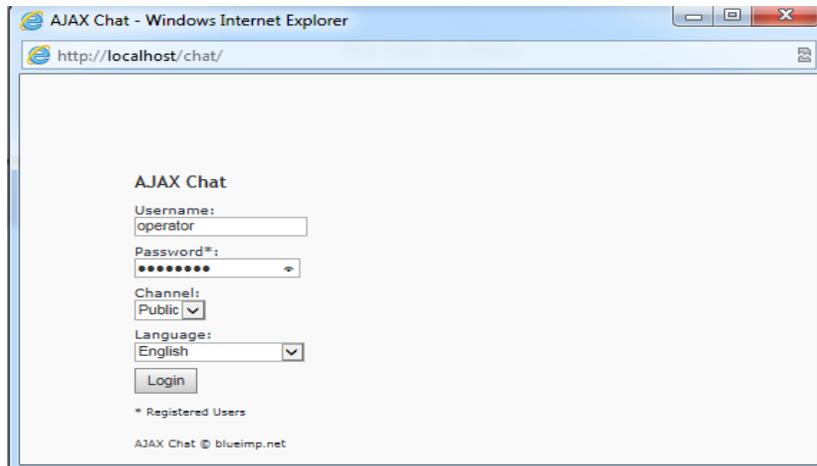
6.1.3 Click “Deliver Now” and verify that a message “Message delivery is in progress” is shown (may take a minute or so), and verify no messages are shown.

6.2 Verify that the Chat function is working .

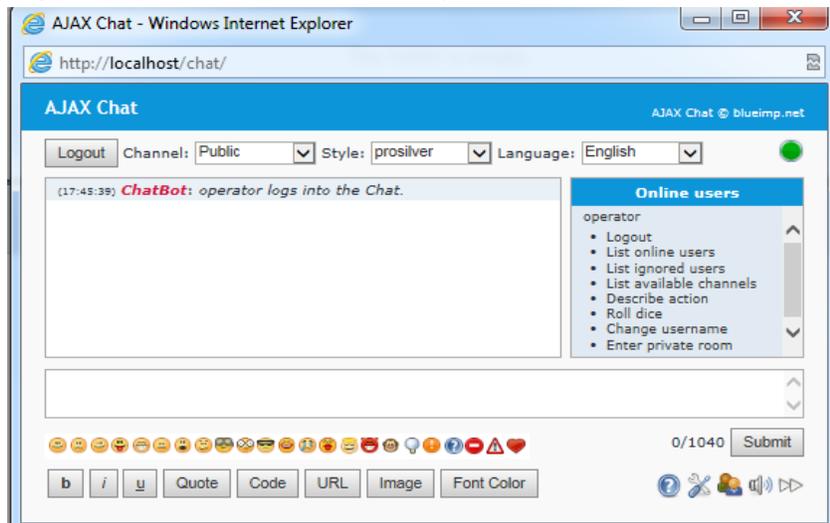
6.2.1 Log in as using an account from your account plan (<http://localhost/webmailphp>).

6.2.2 Click on the button-link near the top of the screen with the text ‘Chat’.

6.2.3 You should see a chat login dialog.



6.2.4 Login with your BMERS username & password.



- 6.2.5 You should see a chat dialog with public & private chat channels.
- 6.2.6 You can test the chat feature by logging in from a remote computer with a different user name.
- 6.2.7 Close the dialog.

6.3 Verify you can send regular email messages internally in your network.

- 6.3.1 Log in as using an account from your account plan (<http://localhost/webmailphp>).
- 6.3.2 Send one or more messages to one or more other accounts from your account plan, by clicking on “New Message” and sending a message to one of the contacts.
- 6.3.3 Verify receipt by logging in under the other accounts and checking their “Inbox”.
- 6.3.4 Send replies.

6.4 Verify you can send text messages internally.

- 6.4.1 Log in as using an account from your account plan (<http://localhost/webmailphp>).
- 6.4.2 Send one or more text messages to other accounts from your account plan by clicking on “New Text”.
- 6.4.3 Verify the text message that appears in the “Sent Items” folder.
- 6.4.4 Verify receipt by logging in under the other accounts and checking their “Inbox”.

6.5 Verify you can send text messages to external addresses.

- 6.5.1 Log in as using an account from your account plan (<http://localhost/webmailphp>).
- 6.5.2 Stop Paclink (if running).
- 6.5.3 Send one or more text messages to an external email address (that you have access to) by clicking on “New Text”.
- 6.5.4 Log in as operator (<http://localhost/operator>) using operator/<The password you have chosen (VALUE< radiomail-manager.password>).
- 6.5.5 Click on the “Radio Message Queue” tab and verify no messages are shown.
- 6.5.6 Start Paclink and wait until it states “Paclink ready”.
- 6.5.7 Click on the “Mail Server Status” tab and verify your text message is listed.
- 6.5.8 Click “Deliver Now” and verify a message. “Message delivery is in progress” is shown (may take a minute or so). Now no messages should be listed.
- 6.5.9 Click on the “Radio Message Queue” tab and verify your text message is now listed.
- 6.5.10 Your message should also be listed in the Paclink SMTP/POP session activity window (RHS) as SMTP link from <your MARS callsign>.
- 6.5.11 Find a radio connection (or use the Internet telnet channel) and perform Connect.
- 6.5.12 Verify your message was sent: The Paclink session statistics should NOT state 0/0 message bytes sent (but the number of bytes sent).
- 6.5.13 Verify that you received the message.

6.6 Verify you can receive text messages from external addresses (assumes step 10.5 has been performed).

- 6.6.1 Send a reply (following the instructions in the message).
- 6.6.2 Find a radio connection (or use the Internet telnet channel) and perform Connect .
- 6.6.3 Verify your message was sent: The Paalink session statistics should NOT state 0/0 message bytes received (but the number of bytes sent).
- 6.6.4 Wait until hMailServer retrieves the newly received message (a few minutes): Your message should be listed in the Paalink SMTP/POP session activity window (RHS) as <ID> delivered to <your MARS callsign>.
- 6.6.5 Log in as using the sending account from your account plan (<http://localhost/webmailphp>) to verify that you received the reply (you may need to click "Check Mail").

Troubleshooting

1. *Problem:* Paclink does not accept messages from hMailServer:

File C:\Program Files\hMailServer\logs\hmailserver_events.log shows the error message:

```
[OnEmailFromPaclink]: Body does not contain destination address. (From: )
```

No or invalid authentication information (either for SMTP relay or POP retrieval).

Possible solutions:

POP: Verify the password information in the hMailServer external account settings of the gateway account.

SMTP: Verify the SMTP account settings, especially the password (must match the value specified in the Paclink.ini file).

2. *Problem:* Paclink receives message from winlink.org, but message never materializes.

No account directory for gateway account.

Possible solution: Verify directory "C:\Paclink\Accounts\BHEPP-0GTW_Account" exists.

3. *Problem:* Paclink fails to change radio frequency when a channel is selected.

No connection to radio modem or incorrect COM port specified.

Possible solution: Use Windows Device Manager to verify that the SCS PTCusb modem appears on the COM port that you configured.

Incorrect or incomplete channel configuration.

Possible solution: Open the Paclink.ini file in <PACLINK_HOME>\Bin. Verify that both the "TNC Serial Port" and "Radio Control Port" properties are set to the COM port value you configured, that the "Radio Control" property is set to "Via PTCII" (if that is your modem) and that the "Radio Model" property corresponds with your station's radio.

4. *Problem:* Webmail: When sending an email, an error message with the text "Can't send message. [RCV] 550 A valid address is required." appears.

A recipient email address was invalid.

Possible solution: Change the email address to a valid email address.

5. *Problem:* Webmail: When sending an email, an error message with the text “Can’t send message. Can’t connect to SMTP server. Check SMTP settings.” appears.

Possible solutions:

The mail server is not running: Check that hMailServer is running.

The user account is configured incorrectly.

6. *Problem:* Webmail: Mail is sent with, but not in Radio Queue.

Possible solutions:

In order to send mail via Radio, either Paclink or RMSExpress needs to be used.

Since both RMS Express and Paclink will be using same ports for SMTP (9025) and POP3 (9110), **only one** of them can be active at any given time.

And since RMSExpress is not a server software, BMERS Mail Relay Service must be running when RMSExpress is the chosen radio software to deliver & receive message from BMERS.

Check your Mail Server Status, Message Queue or Radio Connections Log pages. If you see following message, proceed to #1 & #2 for solutions.

EMERGENCY.ORG Radio Operator Application

System Configuration | System Administration | Mail Server Status | Radio Message Queue | Radio Connections Log

Mail Server Status

The Mail Server has been running since: 2016-12-14 23:07:51

Pending Messages

The following messages are pending delivery from the Mail Server to Paclink or RMS Express. Use the 'Deliver Now' button to force the Mail Server to attempt delivery of the pending messages immediately. Paclink or BMERS Mail Relay Service must be running in order for the Mail Server to deliver these messages!

**NO Radio Program is Running.
Please either start Paclink or BMERS Mail Relay Service (to use with RMS Express).**

Deliver Now | Refresh

ID	Created	From	To	Next Try	Number of Tries
----	---------	------	----	----------	-----------------

1-If your chosen radio software is RMSExpress: (Default configuration)

- a- Open Control Panel->Administrative tools->Services and make sure that BMERS Mail Relay service is running.
- b- If BMERS Mail Relay Service doesn't start, please see Application Event Logs from Windows Event Viewer for specific error messages. (Paclink must NOT be running for BMERS Mail Relay service to start.
- c- Make Sure RMSExpress is installed in the default location C:\RMS Express and configured.

Once you are done, you can verify from BMERS Operator. If BMERS Mail Relay Service is running, following page will display (**RMS Express**) as the Radio Software.

The screenshot shows the 'EMERGENCY.ORG Radio Operator Application' interface. At the top, there is a navigation menu with 'System Configuration', 'System Administration', 'Mail Server Status', 'Radio Message Queue', and 'Radio Connections Log'. A 'HELP' button and a 'Logout' link are also visible. The main content area is titled 'Pending Outgoing Messages' and contains the following text: 'Shows the messages in order of priority that are waiting to be sent via radio (RMS Express). Messages may be formatted in the wrong format if the radio type has been changed. This may result in the messages not being accepted by the WinLink.org mail server. Use the Fix Messages button to fix any incorrectly formatted messages.' Below this text, there is a 'Last refreshed:' field showing '2016-12-21 09:49:20' and a 'Click to Refresh' button. A 'Fix Messages' button is also present. At the bottom, there is a table header with columns: Valid, Message ID, Type, From, To, Priority, Subject, and Size.

If you get the following message, you need to complete your transmissions in RMS Express, and exit. BMERS Mail Relay Service will not deliver messages to RMS Express while RMS Express is running.

The screenshot shows the 'EMERGENCY.ORG Radio Operator Application' interface. At the top, there is a navigation menu with 'System Configuration', 'System Administration', 'Mail Server Status', 'Radio Message Queue', and 'Radio Connections Log'. A 'HELP' button and a 'Logout' link are also visible. The main content area is titled 'Pending Outgoing Messages' and contains the following text: 'Shows the messages in order of priority that are waiting to be sent via radio (RMS Express). Messages may be formatted in the wrong format if the radio type has been changed. This may result in the messages not being accepted by the WinLink.org mail server. Use the Fix Messages button to fix any incorrectly formatted messages.' Below this text, there is a red error message: '**BMERS Mail Relay can not check or send messages while RMS ExPress is running. Please exit from RMS ExPress.**'. Below the error message, there is a 'Last refreshed:' field showing '2016-12-21 10:59:03' and a 'Click to Refresh' button. A 'Fix Messages' button is also present. At the bottom, there is a table header with columns: Valid, Message ID, Type, From, To, Priority, Subject, and Size.

2-If your chosen radio software is Paclink:

- a- Make sure the Paclink is running and configured.

Once you are done, you can verify from BMERS Operator. If Paclink is running, following page will display (**Paclink**) as the Radio Software.



- 7. *Problem:* Webmail: Poor performance, it takes long time for mails to appear in the RMS Express queue, and/or it takes long time to see radio status page.

Possible solutions: Since BMERS Mail Relay is not deleting any records from RMS Express Registry.txt, and none of the messages, Operator should perform cleanup of emails in all folders in RMS Express time to time to prevent performance deterioration.

Appendix A: Configuration Properties

Note that the configuration file follows the [Java properties file](#) format. The file also contains commented out configuration options (lines starting with the # character) for options for which the default will be used. These values can be changed. For a new value to be used, remove the comment character (#) from the beginning of the line. Instructions on how to make changes are at the top of the file.

The following properties can be specified in the file. For each property, it is indicated whether the property value must be given (R = required), or can be overridden (M = modify), while running the prepare.cmd script .

The environment variable %ProgramFiles% will be used to determine the various directories. Please note that on 64-bit systems, %ProgramFiles% typically resolves to “C:\Program Files (x86)”, whereas on 32-bit systems it resolves to “C:\Program Files”.

Property	Default Value	Prepare	Description
MySQL properties			
mysql.root.password		R	Password of the MySQL root user.
mysql.path	C:\xampp\mysql	M	Path to MySQL installation directory.
mysql.service.name	mysql	M	Name of Windows MySQL service.
Apache properties			
apache.htdocs	%ProgramFiles%\NLM-DIMRC\ Radiomail\apache\htdocs		
accountplan.domain		R	Denotes the internal domain name. This value will be used to populate the account plane template.
hMailServer properties			
hmail.admin.user	Administrator	M	Name of the hmailServer administrator user account.
hmail.admin.password		R	Password of the hmailServer administrator user account.

Property	Default Value	Prepare	Description
hmail.database.schema	Hmailserver	M	Name of the hmailServer MySQL database.
hmail.database.user	Hmailserver	M	Name of the hmailServer MySQL user account.
hmail.database.password		R	Password of the hmailServer. MySQL user account.
hmail.path	%ProgramFiles%\hMailServer	M	Directory where hMail is installed.
hmail.service.name	hMailServer	M	Name of the Windows hMailServer service.
hmail.text.maxBodylength	600		Maximum body length of radiomail text messages. Limits the size of text messages that can be sent via radio (by non-privileged users).
hmail.text.maxSubjectlength	60		Maximum subject length of radiomail text messages. Limits the size of text messages that can be sent via radio (by non-privileged users).
hmail.instructions.mars	<-- TO REPLY, KEEP THIS ADDRESS IN FIRST LINE OF YOUR REPLY AND INSERT '//MARS R/' IN SUBJECT LINE. KEEP REPLY UNDER 500 CHARACTERS.)		Instructions for recipients of radio messages (to comply with WinLink 200 rules) that are inserted into each text message when using a MARS callsign.
hmail.instructions.ham	INSERT '//WL2K/' IN SUBJECT LINE. KEEP REPLY UNDER 500 CHARACTERS.)		Instructions for recipients of radio messages (to comply with WinLink 200 rules) that are inserted into each text message when using a ham radio callsign.
hmail.localhost	Localhost		Name of the host that HMail is installed on.
hmail.SMTP.retry.number	288		(Integer) number indicating the number of retries for delivering email (to Paclink).
hmail.SMTP.retry.interval	5		(Integer) number indicating the number of minutes in between retries for delivering email (to Paclink).

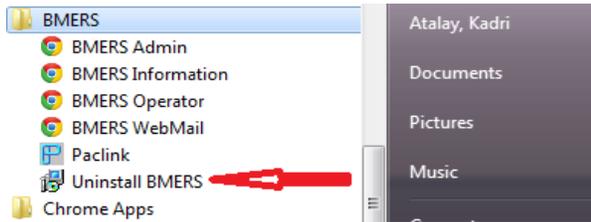
Property	Default Value	Prepare	Description
hmail.paalink.POP.port	9110		Number of Paalink POP ports. Since both hMailServer and Paalink serve as a mailserver, they need to use a different port. Must match paalink.POP.port!
hmail.paalink.SMTP.port	9025		Number of Paalink SMTP ports. Since both hMailServer and Paalink serve as a mailserver, they need to use a different port. Must match paalink.SMTP.port!
Webmail properties			
webmail.admin.password		R	Password of the Webmail administrator account (mailadm) that allows access to the admin web pages of the Webmail application.
webmail.database.schemaName	webmail	M	Name of MySQL Webmail database schema.
webmail.database.user	webmail	M	Name of MySQL Webmail user account.
webmail.database.password		R	Password of MySQL Webmail user account.
webmail.data.path	%ProgramFiles%\NLM-DIMRC\ Radiomail\apache\data	M	Location of the Webmail configuration files.
webmail.inbox.refreshRate	120		Number of seconds between automatic refreshing of inbox.
webmail.service.name	Apache2.2		Name of the Windows Apache (Webmail/operator application) service.
webmail.inbox.refreshAtLogin	True		Indicates whether the Webmail application should automatically check for new messages at login.
webmail.htdocs.path	%ProgramFiles%\NLM-DIMRC\ Radiomail\apache\htdocs\we bmailphp		Indicates the location where the Webmail htdocs (PHP scripts) are located.
Paalink properties			
paalink.path	%ProgramFiles%\NLM-DIMRC\ Radiomail\Paalink		Directory where Paalink is installed.

Property	Default Value	Prepare	Description
paclink.host	Localhost		Host on which Paclink is running.
paclink.POP.port	9110		POP port used by Paclink. Must match hmail.paclink.POP.port!
paclink.SMTP.port	9025		SMTP port used by Paclink. Must match hmail.paclink.SMTP.port!
paclink.serial.port	COM3		Serial port used by Paclink, i.e., port the radio is connected on.
Radio operation application properties			
radiomail-manager.path	%ProgramFiles%\NLM-DIMRC\ Radiomail\apache\htdocs\ operator		Directory where the PHP application is installed.
radiomail-manager.logs-home	C:\xampp\apache\logs		Directory where the application log file is (to be) located.
radiomail-manager.user	Operator		Name of the (primary) user account.
radiomail-manager.password		R	Password of the (primary) user account.
Paclink monitor properties			
radiomail-monitor.path	%ProgramFiles%\NLM-DIMRC\ radiomail\Monitor		Directory where the Paclink Monitor is installed.

Appendix B: Uninstall BMERS & 3rd Party programs

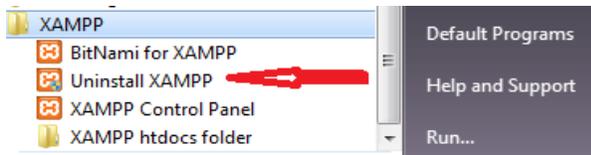
1- Uninstall BMERS:

- a. Stop Paclink
- b. Run Uninstall from the Windows Programs Menu



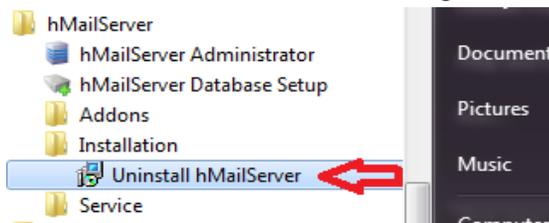
2- Uninstall Xampp:

- a. Run Uninstall from the Windows Program Menu



3- Uninstall HmailServer:

- a. Run Uninstall from the Windows Program Menu



4- Delete any leftover directories in Program Files Directory (x86) for 64 bit systems.

- a. PLEASE NOTE THAT THE BMERS BACKUP FILES YOU HAVE CREATED ARE LOCATED IN NLM-DIMRC\Radiomail\Configuration\Backup DIRECTORY. Make a copy of this directory before you delete.
- b. Run Windows Explorer, Select Program Files Directory and delete following folders:

Name	Date modified	Type
Common Files	7/16/2014 12:17 PM	File folder
DVD Maker	7/16/2014 12:45 PM	File folder
Google	2/26/2014 4:30 PM	File folder
hMailServer	9/25/2014 7:22 PM	File folder
Internet Explorer	7/16/2014 1:00 PM	File folder
Mozilla Firefox	2/26/2014 4:26 PM	File folder
Mozilla Maintenance Service	2/26/2014 4:26 PM	File folder
MSBuild	7/14/2009 12:52 AM	File folder
NLM-DIMRC	9/25/2014 7:22 PM	File folder
Notepad++	3/31/2014 5:12 PM	File folder

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