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# MAP ENGINE MAINTENANCE

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In order to ensure that PressureMAP will continue to provide years of uninterrupted service, it is important to perform simple, routine maintenance periodically on the MAP Engine computer. Setting up a scheduled MAP Engine maintenance program will help to extend the life of the equipment and keep PressureMAP performing optimally.

Please note that the first two suggestions involve shutting down and/or rebooting the MAP Engine computer. You will need to coordinate these activities with the PressureMAP System Administrator if you do not already have access to the System Administration Menu.

Following are some suggestions for keeping the MAP Engine and components in good working order:

- 1) Perform an annual cleaning of the MAP Engine. This task would focus on the process of removing dust and lint from the computer housing. When the computer is running, it acts like a vacuum—sucking in dust and other particles. As the material builds up, it can interfere with the operation of the computer, tape backup equipment, CD/DVD-ROM, electrical components, etc. It is recommended that the computer be cleaned out at least once a year in order to remove accumulating dust and lint.

Before shutting down the computer to begin the annual cleaning, make sure that you have a current backup of all office and device data and that you shut down the computer properly. Procedures for backing up the system and shutting down the computer are described below in this section. It is also a good idea to label the cables that you disconnect from the back of the MAP Engine. This will simplify the process of reconnecting everything after the cleaning has been performed.

- 2) Manually reboot the computer once per month. This simple procedure resets the computer and associated hardware components, and ensures that no files have been left open. The procedure for rebooting the MAP Engine is described at the end of this section.
- 3) Replace UPS batteries. Once every two years, replace the batteries in your Uninterruptible Power System (UPS), if applicable. If you do not check and/or replace these batteries periodically, the system may fail when it is needed most. Battery replacement procedures should be provided with the product documentation.
- 4) If you use electronic tape cartridges to back up your system files, it is a good idea to clean the recording heads of the MAP Engine's tape drive monthly. Like any magnetic recording device, the heads must be cleaned periodically to ensure proper operation and accurate recording of data. The tape drive can be cleaned by inserting a head cleaning cartridge into the drive slot. The cleaning material makes contact with the tape backup heads and removes electromagnetic particles.

If you use DVDs as a backup resource, it is recommended that you purchase a commercial CD/DVD drive cleaning kit and use it monthly or bi-monthly to clean the device. Please follow the instructions provided with the kit to apply a proper cleaning technique.

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- 5) Implement a backup strategy to ensure that you have daily, weekly and monthly backups of your system files. This practice is an important safeguard against the potential loss of valuable data. For more information on a systematic tape backup process, refer to Release Note #15 on the System Studies website (<http://www.airtalk.com/releasenotes.html>). The principles described there can be applied also to other removable backup media, such as DVD-ROM, RAM disks, backup to remote computer via ftp, etc.
- 6) Store the removable monthly system backup media in a safe location somewhere off premises. This practice will help to ensure that important office and device data will not be lost in the event of a catastrophe at the MAP Engine location.
- 7) Systematically replace backup tapes with new ones. Over time, tapes will wear out and could possibly damage the tape drive. When in doubt about the physical condition of a backup tape, replace it. The cost of a new data cartridge is small when compared to the time and expense of replacing lost data.

If you use DVDs to back up your system, it is recommended that you use the DVD+RW disks. The DVD+RW disks can be written to multiple times, whereas the DVD+R disks cannot. Please note also that there have been some reports that data written to DVDs may only be good for a few years, so it is a good idea to use backup tapes for data you would like to keep for long term storage.

- 8) Turn off power to the MAP Engine monitor when the system is not being used (directly accessed) at the console. This will extend the life of the monitor and reduce power consumption.

### ***PROCEDURES TO BACK UP MAP SYSTEM***

The procedures begin at the System Options Menu (shown below). If the Menu Level assigned to your User Account brought you into the PressureMAP System at the MAP Programs Menu, you cannot get into the System Options Menu. Please contact your System Administrator to request access to this level of the MAP program, or have the administrator perform the backups described below.

```
System Options                                MAP Series XX.XX.XX
09/28/2006 12:53                             System Studies Incorporated
-----
System Options
-----
 1. Select MAP Program
 2. Select MAP Data Entry
 3. System Administration
 4. Language Selection
 Q. Quit

Choice?
```

SCREEN 10-1: SYSTEM OPTIONS MENU

**Procedure:**

- 1) From the System Option Menu, select "System Administration" by pressing **3** <Return>. You should see:

```
System Administration                                MAP Series XX.XX.XX
09/28/2006 13:31                                System Studies Incorporated
-----
Password:
```

SCREEN 10-2: SYSTEM ADMINISTRATION PASSWORD PROMPT

- 2) Type in the System Administration password followed by <Return>. The password will not show on the screen. Please note that the password entry is case sensitive.

When the program accepts your password, you should see:

```
System Administration                                MAP Series XX.XX.XX
11/10/2006 13:32                                System Studies Incorporated
-----
System Administration
-----
 1. Set Default Daily Backup Resource    13. Start Process
 2. Backup MAP System Files              14. Stop Process
 3. Restore MAP System Files             15. Pause Process
 4. Update MAP System                    16. User Management
 5. Shutdown the Computer                17. Set Idle Logout Time
 6. Shutdown and Reboot the Computer     18. Set System Name
 7. Set the Date and Time                 19. Reset a Locked Tape Drive
 8. List Users Currently Logged In        20. Network Administration
 9. Reset File Permissions                21. File Maintenance
10. Modem Administration                 22. BackupEDGE
11. Reset the Multi-Port Serial Card     Q. Quit
12. Printer Administration

Choice?
```

SCREEN 10-3: SYSTEM ADMINISTRATION MENU

**Note:** The System Administration Menu shown above may vary slightly depending on which version of PressureMAP you are working with. The one shown in the screen above represents a PressureMAP Version 26 menu.

- 3) From the System Administration Menu, select "Backup MAP System Files." Press **2** <Return>. You should see the Manual Backup Resource Selection Menu shown in SCREEN 10-4 below.

```
Select the backup type                                MAP Series XX.XX.XX
11/10/2006 14:15                                *Schedule Off*      System Studies Incorporated
-----
Select the backup type
-----
  1. Traditional Backup Menu
  2. BackupEDGE Backup Menu
  Q. Quit
Choice?
```

SCREEN 10-4: MANUAL BACKUP RESOURCE SELECTION MENU

- 4) Select the desired method by pressing the appropriate option number and hitting **<Return>**.

Please note that the explanations presented below describe the screens and procedures for manually backing up your PressureMAP office and data files using the two methods offered in SCREEN 10-4. The Traditional Backup Method is described first, followed by the BackupEDGE Backup process.

### ***Traditional Backup Menu Functions***

To access the Backup MAP System Files Menu and perform a manual backup of the PressureMAP system using the traditional magnetic tape cartridge and/or floppy 5 1/4" diskette methods, follow the procedures described below.

#### **Procedure:**

- 1) From the Manual Backup Resource Selection Menu shown in SCREEN 10-4, press **I** and **<Return>**. This produces the Backup MAP Systems Files Menu below from which you can select two from the two traditional backup methods listed in options 1 and 2.

```
Backup MAP System Files                                MAP Series XX.XX.XX
04/10/2005 14:15                                System Studies Incorporated
-----
Backup MAP System Files
-----
  1. Backup MAP System Files to Tape
  2. Backup MAP System Files to Disks
  3. Format a Floppy Disk
  4. List All Files on a Disk
  Q. Quit
Choice?
```

SCREEN 10-5: BACKUP MAP SYSTEM FILES MENU

**Note:** The option of backing up MAP System Files to Disks was retained from earlier version of PressureMAP at the request of MAP System users who were accustomed to working with the DOS operating system. The UNIX operating system, in which PressureMAP is written, is not designed for backing up onto disks. Consequently, the procedure is not only inefficient, but it is also not very user-friendly.

***Backing Up Map System Files to Tape***

The instructions below pertain to the most commonly used backup method that has been utilized by PressureMAP systems since tape backup equipment first became available on commercial PC equipment. Please note that manual tape backups can be performed from the Traditional Backup Menu, described below, and from the BackupEDGE Backup Menu.

**Procedure:**

- 1) From the Backup MAP Systems Files Menu (SCREEN 10-5), select "Backup MAP Systems Files to Tape." Press **I** <Return>. You will see the message:

```
Do you wish to back up MAP System files to tape?  Y[es],  
N[o]
```

- 2) Make sure you have a magnetic tape cartridge in place, and press **Y** <Return> to start the backup. The message:
- 3) Press **Y** <Return> to start the backup. The message:

```
Retensioning the tape, please wait...
```

will appear on the screen. Then after a few minutes you will see:

```
Writing the backup, please wait...
```

The backup may take up to ten minutes. When the backup is complete, the system will automatically verify the accuracy of the backup and print the message:

```
Verifying the backup, please wait...
```

When the verification is complete, the message:

```
Backup Complete  
Hit <Return> to continue.
```

will confirm a successful backup. Hit <Return> to go back to the Backup MAP System Files Menu.

- 4) Press **Q** and <Return> to go back to the Systems Administration Menu.

***BackupEDGE Backup Menu Functions***

Follow the procedures described below to access the BackupEDGE MAP System Files Menu and perform a manual backup of the PressureMAP system using one of the configured backup resources available. These instructions assume that BackupEDGE has been installed on your MAP Engine computer and the appropriate backup resources have been configured. Separate documentation is provided with the BackupEDGE application which describes these procedures.

Please note that backup procedures are **not** provided in this section for all of the possible backup resources that can be used with the BackupEDGE application. Two of the more commonly used

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resources, DVD and remote computer backup via file transport protocol (ftp) are explained below for reference. The procedures for using other resources available from the BackupEDGE Resource Selection Menu to manually back up the PressureMAP system are similar. Simply follow the screen prompts provided.

### Procedure:

- 1) At the System Administration Menu, press option 2, "Backup MAP System Files," followed by <Return>. PressureMAP then displays the Manual Backup Resource Selection Menu shown below.

```
Select the backup type                               MAP Series  XX.XX.XX
11/10/2006 14:55                                *Schedule Off*   System Studies Incorporated
-----
Select the backup type
-----
 1. Traditional Backup Menu
 2. BackupEDGE Backup Menu
 Q. Quit
Choice?
```

SCREEN 10-6: MANUAL BACKUP RESOURCE SELECTION MENU

- 2) Press 2 and <Return> to access the BackupEDGE Resource Selection Menu. If BackupEDGE has not yet been installed on your system, the following prompt displays:

**\*\* BackupEDGE \*\***

**BackupEDGE is currently not installed!**

**If you already have BackupEDGE media, please refer to the BackupEDGE incremental update instructions or call tech support for more information.**

**Hit <Return> to continue..**

- 3) If BackupEDGE has been installed, however, a screen similar to the one shown below displays.

```

Backup MAP system files using BackupEDGE                               MAP Series XX.XX.XX
11/10/2006 14:56                *Schedule Off*           System Studies Incorporated
-----

Backup MAP system files using BackupEDGE
-----
 1. Daily backup resource using Device: NullDevice (type: other)
 2. Daily backup resource using Device: floppy0 (type: other)
 3. Daily backup resource using Device: tape0 (type: tape)
 4. Daily backup resource using Device: dvd0 (type: dvdrom)
 5. Daily backup resource using Device: [computer name] (type: url)
 Q. Quit

```

SCREEN 10-7: BACKUPEDGE RESOURCE SELECTION MENU

### *Backing Up MAP System Files to DVD*

#### **Procedure:**

- 1) Assuming that you are using a MAP Engine computer with a DVD-ROM drive and this device has been set up using the BackupEDGE software, select the option for this device from the BackupEDGE Resource Selection Menu. In the example above, press **4** and **<Return>**. PressureMAP displays the following prompt:

```

Do You Wish To Backup MAP system files using Device:
Dvd0 (type:dvdrom)? Y[es], N[o]

```

- 2) If you wish to proceed with the backup, first make sure that you have a writable DVD in the MAP Engine computer's DVD drive, then type **Y** and **<Return>**. (Typing **N** and **<Return>** will redisplay the BackupEDGE Resource Selection Menu.)

The software initiates the backup process with the selected BackupEDGE *dvd0* device and displays the first three lines of text shown below. After a successful backup has been made onto the DVD, which may take several minutes depending upon the number of offices and devices in your system, the next two text lines shown below display. Please note that a numerical code display of zero (0) indicates that the backup has been performed successfully. (Please consult your BackupEDGE installation document for an explanation of other possible codes.)

```

Begin edge_backup script

Scheduler is off!

Backup is processing, please wait..
File include list completed, starting backup..
End edge_backup script with code = 0

Hit <Return> to continue.

```

- 3) Press **<Return>** to go back to the BackupEDGE Resource Selection Menu (SCREEN 4-12). From this menu you can select Quit to back through the various menus until you reach the System Administration Menu.

### ***Backing Up MAP System Files to a Remote Computer via FTP***

The method of backing up the MAP System files to a remote computer via ftp is essentially identical to the procedure described above. In order for the backup to be accomplished, IP networking requirements for both the MAP Engine computer and the remote computer must be fulfilled. If necessary, consult your company's IT personnel to assist in setting up the IP Addresses, Gateway and Subnet, etc.

#### **Procedure:**

- 1) Choose the desired backup resource option from the BackupEDGE selection menu and press **<Return>**. For example, if you were to select option 5 in the example above to *Back up MAP system files using Device: [computer name] (type: url)*, the software would ask for confirmation, displaying a prompt similar to the one below:

```
Do You Wish To Backup MAP system files using Device:
[computer name] (type:url)? Y[es], N[o]
```

- 2) Enter **Y** and **<Return>** to begin the backup process. The software initiates the backup proceedings with the selected BackupEDGE resource and displays the first three lines of text shown below. After a successful backup has been made, which may take several minutes depending upon the number of offices and devices in your system, the last two text lines display. Please note that a numerical code display of zero (0) indicates that the backup has been performed successfully. (Please consult your BackupEDGE installation document for explanations of other possible codes.)

```
Begin edge_backup script

Scheduler is off!

Backup is processing, please wait..
File include list completed, starting backup..
End edge_backup script with code = 0

Hit <Return> to continue.
```

- 3) Press **<Return>** to go back to the BackupEDGE Resource Selection Menu (SCREEN 4-12).

### ***PROCEDURE TO SHUT DOWN THE COMPUTER***

Turning off the power to the computer while the MAP program is running risks losing or damaging files. The procedure below describes a controlled shutdown that will ensure that no data is lost. This procedure should be followed whenever the computer needs to be turned off such as for cleaning, during the installation of new hardware, or if the computer is to be moved. It is also useful as a trouble shooting procedure when modems need to be reinitialized.

While this utility can be performed from a remote terminal, running the utility will cut off the remote terminal. Then the remote terminal user will have to wait until someone reboots the program from the system computer.



**Procedure:**

- 1) From the System Administration Menu, select "Shutdown the Computer". Press **4** <Return>. You will see the message:

```
Do you wish to shut down the computer? Y[es], N[o]
```

- 2) Press **Y** <Return>. Which message you see next will depend upon whether or not anyone else is currently logged into the system. If no one else is logged in, the system will immediately shut down. You will see the messages:

```
No other users currently logged in.
```

```
* * Normal System Shutdown * *
```

```
* * Safe to Power Off * *
```

```
* * Press any Key to Reboot * *
```

If other users are logged onto the system, both you and they will see the following series of messages:

```
Shutdown started.  
The system will be shutdown in 60 seconds.  
Please log off now.
```

And then, 60 seconds later:

```
THE SYSTEM IS BEING SHUT DOWN NOW ! ! !  
Log off now or risk your files being damaged.
```

Soon after the last message, the remote users will be logged off, if they haven't done so already.

- 3) The last message will remain on the remote users' screen after they are cut off. To access the system, they will have to call in and log on again after someone reboots the program from the main computer. The user working on the system terminal will see the message:

```
* * Safe to Power Off * *
```

```
* * Press any Key to Reboot * *
```

- 4) You may now feel free to turn off the computer .
- 5) After turning the computer on again, you will see a message similar to the following on the system computer's monitor:

```
Phoenix 80486 Rom Bios Version XX.XX  
Copyright (c) 1985-1988 Phoenix Technologies Ltd.  
All rights reserved
```

This message will vary slightly depending on the type of hardware you are using.

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- 6) As the system reboots, you will see numerous lines of text scrolling across the screen. You will also see a series of prompts after which the cursor stops and flashes. Some of these prompts will require your input, some will not, and some are optional. The first prompt is:

**Hit CTRL ALT ESC for SETUP.**

Ignore this prompt and the program will soon move on. Next, you will see:

**Boot  
:**

- 7) Press **<Return>**. Then you will see:

**Type CONTROL-d to proceed with normal startup, (or give root password for system maintenance):**

- 8) Type in **<Control d>** (no **<Return>**). You will see the message and prompt:

**Current system time is: (date and time)**

**Enter new time ([yymmdd]hhmm):**

- 9) The date and time recorded on the computer's clock are indicated. If the computer clock is wrong, you may enter a new time or date. If the computer clock is right, press **<Return>** or simply ignore the prompt and wait for the program to move on. After a while, you will see the login prompt on the screen:

**PressureMAP XX.XX.XX Login:**

- 10) If some other text appears on the screen after the login prompt, press **<Return>** and the login prompt will appear again below the text. At that point, type in your User ID and password.

After the MAP System files have been backed up and the computer shut down as described above, you can prepare to remove the MAP Engine computer to a location where it can be blown out and cleaned. First, disconnect the AC power cord, then identify and, if necessary, label all peripheral equipment connectors (such as the monitor, keyboard, and modem cables). Next, move the computer to a location where you can easily access the screws that hold the cover in place.

Once you have opened the computer, you can use a blower or a vacuum cleaner in the reverse mode to blow out the dust. You can also use a vacuum cleaner carefully in the normal mode to suck out the dust and lint. Try to get it as clean as possible without damaging anything. When you have finished, replace the cover and cords, and power up the machine.

### ***PROCEDURE TO SHUT DOWN AND REBOOT THE COMPUTER***

If you use the proper procedure to quit the operating system, it is called a shutdown. When the computer is shut down correctly, there is no danger of losing files. Whenever the power is unexpectedly shut off to the system computer, there is a danger of losing or damaging files. Such an occurrence is appropriately

called a crash. This utility will shut down the computer correctly and immediately reboot it again. It is used during the System Update.

It is also used for trouble shooting when a tape drive seems to be hung up or a modem needs reinitializing. While this utility can be performed from a remote terminal, running the utility will cut off the remote terminal. The remote terminal user will have to wait until the system reboots itself and then log on again.

### Procedure:

- 1) From the System Administration Menu, select "Shutdown and Reboot the Computer". Press **5** <Return>.

```
Do you wish to shutdown and reboot the computer? Y[es],  
N[o]
```

Press **Y** <Return>. Which message you see next will depend upon whether or not any other users are currently logged into the system. If no other users are logged on, the system will immediately shut down, begin the rebooting, and display the messages illustrated here after Step 2. If there are other users logged onto the system, both you and the other users will see the following series of messages:

```
Shutdown started. (date)
```

Followed by:

```
The system will be shutdown in 60 seconds.  
Please log off now.
```

And then, 60 seconds later:

```
THE SYSTEM IS BEING SHUT DOWN NOW ! ! !  
Log off now or risk your files being damaged.
```

Soon after the last message, the remote terminal users will be logged off if they haven't already logged off.

- 2) The last message will remain on the remote users' screen after they are cut off. To access the system, they will have to call in and log on again. If your monitor is attached to the system computer, you should next see:

```
Phoenix 80486 Rom Bios Version XX.XX  
Copyright (c) 1985-1988 Phoenix Technologies Ltd.  
All rights reserved
```

This message is displayed at the beginning of the rebooting process and will vary depending on the type of hardware you are using.

- 3) As the system reboots, you will see numerous lines of text scrolling across the screen. You will also see a series of prompts after which the cursor stops and flashes. Some of these prompts will require input from you, some will not, and some are optional.

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The first prompt will be:

**Hit CTRL ALT ESC for SETUP.**

Ignore this prompt and the program will soon move on. Next, you will see:

**Boot  
:**

- 4) Press **<Return>** or simply ignore this prompt; the booting will continue after a minute or so. Then you will see:

**Type CONTROL-d to proceed with normal startup (or give root password for system maintenance):**

- 5) Press the **<Ctrl>** and **<D>** keys (no **<Return>**). You will see the message and prompt:

**Current system time is: (date and time)**

**Enter new time ([yymmdd]hhmm):**

- 6) The date and time recorded on the computer's clock are indicated. If the computer clock is wrong, you may enter new time or date. If the computer clock is correct, press **<Return>** or simply ignore the prompt and wait for the program to move on. After a while, you will see the login prompt on the screen:

**PressureMAP XX.XX.XX Login:**

- 7) If some other text appears on the screen after the login prompt, press **<Return>** and the login prompt will appear again below the text. At that point, type in your User ID and password.