BAR CODE MEDICATION ADMINISTRATION (BCMA)

BCMA Backup System (BCBU)

INSTALLATION GUIDE

PSB*3*59

Version 3.0
November 2013

Department of Veterans Affairs
Product Development

Acknowledgments

The Bar Code Administration - Enterprise Tactical Support Team (National VistA Support Team) would like to extend the following acknowledgements to:

Mr. Felix Desarno and Mr. Naeem Mian of the New Jersey Health Care System.
The Bar Code Medication Administration Backup System (BCBU) has been based on their original conceptual model and retains many of the ideas implemented in the Class III plan. Their hard work and determination has led the way for us to provide all VA Medical Centers with a viable BCMA Contingency Plan.

Mr. John Clemens of VA Medical Center San Francisco, California.
His knowledge of the VistA HL7 package and work on the security portion of the Bar Code Medication Administration Backup System (BCBU) made it possible for the Class I acceptance of the package.

Revision History

Each time this manual is updated, the Title Page lists the new revised date and this page describes the changes. If the Revised Pages column lists "All", replace the existing manual with the reissued manual. If the Revised Pages column lists individual entries (e.g., 25, 32), either update the existing manual with the Change Pages Document or print the entire new manual.

Date	Revised Pages	Patch Number	Description
11/2013	44 - 46	PSB*3*59	Patients with no current medication orders are now printed consistently on the three BCBU MAR reports (Print MAR for All Wards, Print MAR for Selected Patient, and Print MAR for Selected Ward). The patient's information is followed by a message stating "No Active Medication Orders were reported to the Contingency at the time the MAR was printed", followed by multiple blank lines and a footer. Also, a blank page is no longer used as a separator on the Print MAR for a Selected Ward (PW) and the Print MAR for All Wards (PA). On both the Print MAR for a Selected Ward (PW) and the Print MAR for All Wards (PA) menus, after the question 'Report [A]LL or [C]URRENT orders?' has been answered 'CURRENT', a prompt appears, 'Include Patients without Active Medications?' (defaults to 'Yes'). Answering 'No' prevents current patients without medications from printing on the report. (A. Scott, PM; R Sutton, Technical Writer)
09/2012	i, 44, 44a-44b	PSB*3*69	The Special Instructions and Other Print Info project changed these comment type fields to unlimited word processing text. This text is sent over in the same NTE segment as before. BCBU has been enhanced to receive and store the unlimited word processing text and print the word processing lines of text on the MAR reports as they were typed and stored in the Inpatient Order. (R. Singer, PM; B. Thomas, Tech Writer)
03/2006	All	PSB*3*8	Document reissued for significant enhancements and issue resolution. See patch description for details. (R. Singer, PM, K. Cownie, Author, M. Newman, Tech. Writer)
08/2003			Original Released Bar Code Medication Administration Backup System (BCBU) Installation Guide.

Table of Contents

BCMA V. 3.0 and This Guide

Benefits of BCMA PSB*3*8

The Veterans Health Information Systems and Architecture (VistA) Bar Code Medication Administration Backup System (BCBU) patch PSB*3*8 software will provide a Class I solution to the BCMA Contingency IRA #20020403. This plan reflects the intent of VHA Directive #6210, the Automated Information Systems (AIS) Security, which states that all facilities are responsible for the development, maintenance, and annual testing of individual AIS contingency. This software maintains a current copy on the designated workstation, of all the inpatient pharmacy activities including the inpatient medication orders, medication administrations, and allergies that are included on a Pharmacy Medication Administration Record (MAR).

The Bar Code Medication Administration Backup System (BCBU) patch PSB*3*8 will interface with the BCMA VistA product to provide a real-time backup of all inpatient medication activities on a designated workstation(s). Designated workstation(s) will contain current information regarding inpatient medication orders (Unit Dose and IV), medication administration record (MAR), medication administration history (MAH), and patient allergies. Workstation(s) are updated using the VA Health Level (HL7) package. These workstation(s) are available for use according to local policies concerning VistA**,** BCMA, or network outages.

Benefits of This Guide

The Veterans Health Information Systems and Architecture (VistA) Bar Code Medication Administration Backup System (BCBU) Installation for patch PSB*3*8 provides detailed instructions required for installing and implementing this new software. Additional manuals are available with instructions for installing and implementing the new software on either a Linux or Caché workstation environment.

BCMA V. 3.0 and This Guide

Our Target Audience

This guide was developed for the following individuals, who are responsible for the installation, maintenance, support, and use of the package.

- Information Resources Management (IRM)
- Clinical Application Coordinator (CAC) – called Applications Package Coordinator (ADPAC) at some sites
- National VistA Support (NVS)
- Independent Verification and Validation (IV&V)

This Manual Includes

Security Information: This section contains information regarding the mail group, alerts, and file security associated with the Bar Code Medication Administration Backup System (BCBU) patch PSB*3*8 software.

Pre-Installation Information: This section provides information needed prior to installing the Bar Code Medication Administration Backup System (BCBU) patch PSB*3*8 software.

Installation Information: This section contains instructions and examples of the Bar Code Medication Administration Backup System (BCBU) patch PSB*3*8 software.

Technical Information: This section provides information on protocols involved in the Bar Code Medication Administration Backup System (BCBU) patch PSB*3*8 software.

Other Sources of Information

For more background and technical information about BCMA V. 3.0, refer to the Web sites listed below.

Background/Technical Information

To access the BCMA Home page, enter http://vaww.vista.med.va.gov/bcma in the Address field of your browser. The BCMA Backup System Installation Guide can be accessed from the VistA Documentation Library (VDL) at http://www.va.gov/vdl/clinical.asp?appID=84. The document is available in MS Word (.doc) format and Adobe Portable Document Format (.PDF).

TIP:
Bookmark these sites for future reference.

BCMA V. 3.0 and This Guide

Conventions Used in This Guide

Before installing patch PSB*3*8, review this section to learn the many conventions used throughout this guide.

- **Keyboard Responses:** Keys provided in **boldface**, within the steps, help you quickly identify what to press on your keyboard to perform an action. See the examples provided below.
  - **Within the Steps:** At the "Select Kernel Installation & Distribution System Option" prompt, type **INSTALL**, and then press **ENTER**.
  - **Within Screen Captures:** Text in **boldface**, centered between arrows on screen captures, identifies the key you must press for the system to capture your response or to move the cursor to the next field. See the following example.

DEVICE FOR QUEUED JOB OUTPUT: <**Enter**>

- **Mouse Responses:** Buttons provided in **boldface**, within the steps, indicate what you should click on your computer screen using the mouse. For example, when you see **NEXT, YES/NO,** or **OK** in the steps, click the appropriate button on your computer screen.
- **User Responses:** Information presented in **boldface**, within steps or shaded screen captures, indicate what you should "type" (enter) onto your computer screen. See the examples provided below.
  - **Within the Steps**: At the "Select OPTION NAME" prompt, type XPD MAIN and then press **ENTER**.
  - **Within Screen Captures**: See the following example.

Conventions Used in This Guide (cont.)

RESCHEDULING FREQUENCY: **1M**

- **Screen Captures:** Provide "shaded" examples of what you will see on your computer screen, and possible user responses.
- **Notes:** Provided within the steps, describe exceptions or special cases about the information presented. They reflect the experience of our Staff, Developers, and Testers.
- **Menu Options:** When provided in *italics*, identifies a menu option. When provided in **boldface**, ALL CAPS, identifies the letters that you should type onto your computer screen, before pressing **ENTER**. The system then goes directly to the menu option. (**Note:** The letters do *not* have to be entered as capital letters, even though they are provided within the steps in this format.) See the examples provided below.
  - **Italicized:** Use the Kernel *First Line Routine Print* option to print a list containing the first line of every PSB routine.
  - **Capitalized:** At the "TaskMan Management Option:" prompt, type **Schedule**/Unscheduled Options, and then press **ENTER.**

Locating Detailed Listings

You can obtain and print listings about patch PSB*3*8 routines and Data Dictionaries using the information provided below.

Routines

Use the Kernel routine XINDEX to produce detailed listings of routines. Use the Kernel *First Line Routine Print* option to print a list containing the first line of every ALPB routine.

Data Dictionaries

The Data Dictionaries (DDs) are included in the on-line documentation for this software application. You can use the VA FileMan *List File Attributes* option, under *Data Dictionary Utilities* option, to print the Dictionaries. Journaling is not recommended for the ALPB global.

BCMA V. 3.0 and This Guide

Interface Software

The interface software is HL7. This will transmit the pharmacy data to the designated workstation.

Alerts

The mail group, PSB BCBU ERRORS, will receive all alerts.

BCMA Menus

Bar Code Medication Administration Backup System (BCBU) patch PSB*3*8 software exported two main menus. Patch PSB*3*8 added two options to the BCMA Backup System Management Menu option. The options for each menu are listed in this section.

- BCMA Backup System (Wrkstn) [PSB BCBU WRKSTN MAIN]
- BCMA Backup System (VistA) [PSB BCBU VistA MAIN]

BCMA Backup System (Wrkstn)

This menu includes the following options:

- List/Display Orders
- Print MAR for All Wards
- Print MAR for Selected Patient
- Print MAR for Selected Ward
- Print Blank MAR for Selected Patient
- List of Wards in BCMA Backup File
- BCMA Backup System Management Menu
    - *BCMA Backup System Error Log*
    - *Edit Workstation Parameter Settings*
    - *Purge Orders Past X days old*

BCMA Backup System (VistA)

This menu includes the following options:

- Associate Backup Workstations with a Division
- Default Workstation Initialize
- Divisional Worstation Initialize
- Initialize a Backup Workstation with BCMA Users
- Single Patient Init

Security Information

Mail Group	The PSB BCBU Errors Mail Group is used to notify responsible users of potential problems with sending information to the Contingency Workstation(s). Members of this group should include the staff that monitors the BCMA Backup System.
Remote Systems	The workstation where the software resides is the only remote system that will receive any data.
Archiving/Purging	The product purges itself and only keeps active inpatient data. The journal files are flipped and purged nightly so disk space is not consumed by journaling.
Contingency Planning	This contingency plan software can be used if there is a VistA outage. The sites can use the data stored on the workstations using the outputs on the menu supplied.
Menus	There are two menus for use with this package, BCMA Backup System (Wrkstn) and BCMA Backup System (VistA). The BCMA Backup System Management Menu is under the first menu and requires a Security Key as described below.
Security Keys	The BCMA Backup System Management Menu is secured by the security key, PSB BUMGR and MUST be assigned to the designated IRM personnel who currently manages the system for total access to the Bar Code Medication Administration Backup System.
References	Kernel Systems Manual V. 8.0 Kernel Toolkit V. 7.3 VA FileMan V. 22.0 MailMan V. 8.0 Health Level Seven (HL7) V. 1.6

Pre-Installation Information

Recommended Users

Information Resource Management (IRM) Staff is recommended for installing, implementing and supporting the Bar Code Medication Administration Backup System (BCBU) PSB*3*8. IRM, Pharmacy, and Nursing staff must coordinate the implementation of the setup tasks after the package is installed.

VistA Operating System and Performance Capacity

VistA Bar Code Medication Administration Backup System (BCBU) patch PSB*3*8 currently runs on the standard hardware platforms used by the Department of Veterans Affairs Health Care System facilities. These hardware platforms consist of standard or upgraded Alpha 4100, ES40, or ES45 clusters, and run either DSM on VMS, Caché/VMS, Caché/NT, or CachéXP. There are no significant changes in the performance capacity of the VistA operating system once the VistA Bar Code Medication Administration Backup System (BCBU) has been installed. The software application should not create any appreciable global growth or network transmission problems. There are no memory constraints.

Central Processing Unit (CPU) Requirements

The following workstation configuration is recommended for installing and running the VistA Bar Code Medication Administration Backup System (BCBU).

Sites previously using the New Jersey Class III package should be able to use current workstations and Caché license.

Hardware

- 1-2 Ghz CPU
- 256-512 Mb RAM
- 20 Gb hard drive
- Monitor
- Printer

Central Processing Unit (CPU) Requirements (cont.)

Software

- Microsoft Windows XP, Windows 2000 or Windows NT with Intersystems Cache 5.x.x (4.1.4), (3.2.1) 20 user License

  or

- RedHat Linux 8.0 with Greystone GT.M

Test Sites

VistA BCBU PSB*3*8 software was tested at the following VA Sites and platforms prior to being released:

- San Francisco VA Medical Center, CA
- Upstate New York HCS
- Indianapolis VA Medical Center, IN
- Central Alabama HCS
- Memphis VA Medical Center, TN

Pre-Installation Information

Minimum Required Packages

Before installing BCBU PSB*3*8, make sure that your VistA system includes the following Department of Veterans Affairs (VA) software packages and versions (those listed or higher):

Package	Minimum Version Needed
Kernel	8.0
VA FileMan	22.0
VA MailMan	8.0
Health Level Seven (HL7)	1.6
Pharmacy Inpatient Medications	5.0
Bar Code Med Admin (BCMA)	3.0

Installation Time Estimates

VistA Bar Code Medication Administration Backup System (BCBU) patch PSB*3*8 installation time is less than 2 minutes during off peak hours. The time for workstation setup is approximately 30 minutes.

Important! You should install and test BCBU PSB*3*8 in your test accounts BEFORE installing in your production accounts.

Required Patches

Before installing PSB*3*8, make sure that the following released patch is installed:

Bar Code Medication Administration V. 3.0
PSB*3*7

Users on the System

Users may remain on the system; however, the VistA Bar Code Medication Administration Backup System (BCBU) patch PSB*3*8 installation should be done during off peak hours when minimal Pharmacy activity is occurring.

Options Out of Order

The options, *Inpatient Order Entry* [PSJ OE] and *Non-Verified/Pending Orders* [PSJU VBW] are to be placed out of order during installation.

Namespace

VistA Bar Code Medication Administration Backup System (BCBU) patch PSB*3*8 routine namespace is ALPB. The options/protocols/templates/parameters and keys use the PSB namespace. Files are distributed under the PSB namespace, but use ALPB global namespace.

Pre-Installation Information

Data Dictionary Changes

There are no changes made to the Data Dictionaries, but two new files have been added. These files are located on both the workstation and the VistA server, but are only populated on the workstation.

- ^ALPB(53.7, BCMA Backup Data
- ^ALPB(53.71, BCMA Backup Parameters

Journaling is not recommended for the ALPB global.

Resource Requirements

This section summarizes the (approximate) number of resources required to install BCMA V. 3.0.

- Routines 28
- Globals 1 (^ALPB)
- Files 2 (53.7, 53.71)
- ^ALPB Size Backup data= 268,288 bytes (131 blocks) per order

Note: Population of the ALPB global will only occur on the workstation, there is no global growth on the VistA server. ALPB global size estimate was acquired by dividing the number of blocks consumed by the total number of orders in file 53.7. This results in the number of blocks per order which is multiplied by 2048, which is the number of bytes per block in Cache.

- FTEE Support .2
- FTEE Maintenance .2

Printers

Your site should provide dedicated printers for each of the contingency workstations, which would allow printing of the MAR or MAH if the network was down.

Note: The printer must have the capability to print 132 characters per line.

Pre-Installation Information

Routines Installed

Review the listing below to learn the routines installed on your site's VistA Server during the installation of patch PSB*3*8. The first line of each routine briefly describes its general function.

Note: You can use the Kernel *First Line Routine Print* option to print a list containing the first line of each ALPB routine.

BCMA PSB*3*8 Routines Installed on VistA Server

```
ALPB8     value =    1016866
ALPBBK    value =    6214134
ALPBCBU   value =    1710946
ALPBELOG  value =    6391337
ALPBFRM1  value =    11248156
ALPBFRM2  value =    8886579
ALPBFRMU  value =    4295514
ALPBGEN   value =    10201828
ALPBGEN1  value =    8809016
ALPBGEN2  value =    2679718
ALPBHL1   value =    14979457
ALPBHL1U  value =    12027672
ALPBIN    value =    4105691
ALPBIND   value =    5809117
ALPBINP   value =    10451599
ALPBOP    value =    1898706
ALPBPALL  value =    6414482
ALPBPARM  value =    8937865
ALPBPPAT  value =    5081715
ALPBPWRD  value =    9771307
ALPBSP1   value =    4545482
ALPBSP2   value =    845669
ALPBSPAT  value =    2404489
ALPBSWRD  value =    5435921
ALPBUTL   value =    9642997
ALPBUTL1  value =    6275666
ALPBUTL2  value =    1954969
ALPBUTL3  value =    4245189
```

Installation Information

VistA Server Installation Instructions	VistA Bar Code Medication Administration Backup System (BCBU) patch PSB*3*8 distribution is done by using the VA KIDS package. An example of this installation is found at the end of this installation guide.
PC Workstation Database Initialization	Once the PC Workstation(s) have been setup and assigned an IP address, proceed with setting up the workstation link. Create a link (node) for the PC workstation. This will be the regular transmission node. Name it "BC" and the ward. For example, if the ward is 2A the link could be called "BC 2A". Use the *Link Edit* [HL EDIT LOGICAL LINK] option of the HL Interface menu. An example of this installation is found at the end of this installation guide in the Sample PC Workstation Database Initialization Section.
MAR Reports	Various MAR reports are located at the end of this installation guide under the Contingency PC Workstation Reports Section.

Please refer to the following documents for additional Installation Information:

BCMA Backup System (BCBU) InterSystems Cache Installation Setup	Refer to "Bar Code Medication Administration Backup System (BCBU) InterSystems Caché Installation Setup" guide for a systematic installation of Caché install on a PC workstation.
BCMA Backup System (BCBU) Linux Installation Setup	Refer to "Bar Code Medication Administration Backup System (BCBU) Linux Installation Setup" for systematic installation of Linux on a PC workstation. This manual also includes step-by-step installation of GT/M, VistA, and the Bar Code Medication Administration Backup System (BCBU) on the Linux workstation.

Sample Installation

```
Select Kernel Installation & Distribution System Option: Installation


   1      Load a Distribution
   2      Verify Checksums in Transport Global
   3      Print Transport Global
   4      Compare Transport Global to Current System
   5      Backup a Transport Global
   6      Install Package(s)
          Restart Install of Package(s)
          Unload a Distribution

Select Installation Option: Install Package(s)
Select INSTALL NAME:    PSB*3.0*8     Loaded from Distribution     Loaded from
Distribution  8/19/04@11:36:47

This Distribution was loaded on Aug 19, 2004@11:36:47 with header of
   8/19/04  ;Created on Aug 19, 2004@08:30:19
   It consisted of the following Install(s):
      PSB*3.0*8
Checking Install for Package PSB*3.0*8

Install Questions for PSB*3.0*8

Incoming Files:

   53.7      BCMA BACKUP DATA
Note:  You already have the 'BCMA BACKUP DATA' File.


   53.71     BCMA BACKUP PARAMETERS
Note:  You already have the 'BCMA BACKUP PARAMETERS' File.

Want KIDS to Rebuild Menu Trees Upon Completion of Install? YES// NO


Want KIDS to INHIBIT LOGONs during the install? YES// NO
Want to DISABLE Scheduled Options, Menu Options, and Protocols? YES// NO

Enter the Device you want to print the Install messages.
You can queue the install by enter a 'Q' at the device prompt.
Enter a '^' to abort the install.

DEVICE: HOME//   TELNET
```

Sample Installation

```
                                  PSB*3.0*8
-------------------------------------------------------------------------------

 Installing PACKAGE COMPONENTS:

 Installing FORM

 Installing OPTION
              Aug 19, 2004@11:37:26

 Running Post-Install Routine: POST^ALPB8

 Updating Routine file...

 Updating KIDS files...

 PSB*3.0*8 Installed.
              Aug 19, 2004@11:37:27

 Install Message sent #1327
-------------------------------------------------------------------------------
          +---------------------------------------------------------+
  100%    |             25             50             75           |
Complete  +---------------------------------------------------------+


Install Completed
```

Sample PC Workstation Database Initialization

When initializing the workstations, you add an entry at the HL Logical Link Node prompt for each pc workstation your site has. The name of each link should represent the actual workstation location. For example, if you have a workstation on Ward 2A, the name of the workstation should be BC 2A. Associating the name of the HL Logical Link Node with the ward where the workstation is located, will aid in locating specific workstations should a problem arise. Once you have initialized the workstation with the correct workstation location, you can update the workstation with the users from the VistA system that have the [PSB GUI CONTEXT - USER] option. This initialization process will queue the activity and when complete send an alert.

On new installations, check the Parameter Value. The parameter can be left off until the workstation is ready to be initialized. If the workstation is already running, **do not** turn the Parameter Value off. Use the *General Parameter Tools* [XPAR MENU TOOLS] option to edit the parameter values.

```
XPAR MENU TOOLS     General Parameter Tools

  LV     List Values for a Selected Parameter
  LE    List Values for a Selected Entity
  LP    List Values for a Selected Package
  LT    List Values for a Selected Template
  EP    Edit Parameter Values
  ET    Edit Parameter Values with Template
  EK    Edit Parameter Definition Keyword

Select General Parameter Tools Option: ep Edit Parameter Values
                     --- Edit Parameter Values ---


Select PARAMETER DEFINITION NAME: PSB BKUP ONLINE

---------- Setting PSB BKUP ONLINE  for Package: BAR CODE MED ADMIN ----------
Value: YES//<ENTER>
-------------------------------------------------------------------------------

Select PARAMETER DEFINITION NAME: PSB BKUP IPH     BCMA Contingency Active Pharm Order

----------- Setting PSB BKUP IPH  for Package: BAR CODE MED ADMIN -----------
Value: 7// <ENTER>
-------------------------------------------------------------------------------

Select PARAMETER DEFINITION NAME: PSB BKUP MEDLG    BCMA Contingency MedLog DFT

---------- Setting PSB BKUP MEDLG  for Package: BAR CODE MED ADMIN ----------
Value: 15// <ENTER>
-------------------------------------------------------------------------------
```

Continue with the Workstation setup.

```
>D ^XUP
Setting up programmer environment
Terminal Type set to: C-VT100

Select OPTION NAME: HL MAIN MENU       HL7 Main Menu
          Systems Link Monitor
          Filer and Link Management Options ...
          Message Management Options ...
          Interface Developer Options ...
          Site Parameter Edit
```

Sample PC Workstation Database Initialization

```
Select HL7 Main Menu Option: INTERFACE  Developer Options
   EA     Application Edit
   EP     Protocol Edit
   EL     Link Edit
   VI     Validate Interfaces
          Reports ...

Select Interface Developer Options Option: EL  Link Edit

Select HL LOGICAL LINK NODE: BC 2A
INSTITUTION:<ENTER> ← leave blank
DOMAIN: <ENTER> ← leave blank
AUTOSTART: Enabled
QUEUE SIZE: 10
LLP TYPE: TCP
TCP/IP SERVICE TYPE: CLIENT (SENDER)
   TCP/IP ADDRESS: (workstation IP address)
    TCP/IP PORT: (10000)
ACK TIMEOUT:10             RE-TRANSMISSION ATTEMPTS: 2
READ TIMEOUT:10           EXCEED RE-TRANSMIT ACTION: restart
BLOCK SIZE: 256
STARTUP NODE: ←leave blank         PERSISTENT: NO
RETENTION: 120                      UNI-DIRECTIONAL WAIT: ←leave blank

Save the link
```

Sign out and then sign back in by doing the following:

```
>D ^XUP

Setting up programmer environment
Terminal Type set to: C-VT100

Select OPTION NAME:    PSB BCBU VISTA MAIN     BCMA Backup System (VISTA)

PSB BCBU VISTA MAIN BCMA Backup System (VISTA)
    LNK    Associate Backup Workstations with a Division
    DFT    Default Workstation Initialize
    DIV    Divisional Workstation Initialize
    USR    Initialize a Backup Workstation with BCMA Users
    PAT    Singe Patient Init

Select BCMA Backup System (VISTA) Option: LNK  Associate Backup Workstations
with a Division
Do you want all backup data to go to the same group of
backup devices regardless of the patient's division?
Enter Yes or No: YES// <ENTER>

     Select one of the following:

          A         Add a Logical Link
          D         Delete a Logical Link
```

Sample PC Workstation Database Initialization

```
OPERATION: ADD// <ENTER>  Add a Logical Link
The following DEFAULT links are associated with this package:
BC KEVC
BC SID
BC KEVINK
BC SFVA
Select HL LOGICAL LINK: BC 2A  ...Added
Select HL LOGICAL LINK: ?


    LNK    Associate Backup Workstations with a Division
    DFT    Default Workstation Initialize
    DIV    Divisional Workstation Initialize
    USR    Initialize a Backup Workstation with BCMA Users
    PAT    Singe Patient Init
```

Note: If you want to remove an HL7 Link from your system, make sure you use the *LNK Associate Backup Workstation with a Division* option to delete the logical link association prior to deleting the link in HL7. If this is not done, you will get undefined errors on the VistA system. It is recommended that the Workstation Initialize be queued to run during non-peak hours. These inits may run for several hours depending on the parameter settings.

```
Select BCMA Backup System (VISTA) Option: DFT <RET> Default Workstation
Initialize
Include all workstations
Enter Yes or No? YES// NO
Select WorkStation Link : BC 2A

Selected Workstations

 BC 2A
Select WorkStation Link :
Requested Start Time: NOW// <RET> (FEB 18, 2003@14:28:13)
2624847

    LNK    Associate Backup Workstations with a Division
    DFT    Default Workstation Initialize
    DIV    Divisional Workstation Initialize
    USR    Initialize a Backup Workstation with BCMA Users
    PAT    Singe Patient Init

Select BCMA Backup System (VISTA) Option: USR  Initialize a Backup
Workstation with BCMA Users
This option searches for users that hold the option, 'PSB GUI CONTEXT - USER'
and if they are active users, transmits the information to your BCMA Backup
Workstations.
NOTE that you must have completed the step of assigning workstations to
either a single default group or by division.

Do you wish to continue? YES// <ENTER>
```

Sample PC Workstation Database Initialization

```
Do you wish to queue this init? YES//<ENTER>
Requested Start Time: NOW// <ENTER> (FEB 20, 2003@17:17:02)
TASK #: 2625005

    LNK    Associate Backup Workstations with a Division
    DFT    Default Workstation Initialize
    DIV    Divisional Workstation Initialize
    USR    Initialize a Backup Workstation with BCMA Users
    PAT    Singe Patient Init

You have PENDING ALERTS
 Enter "VA to jump to VIEW ALERTS option
Select BCMA Backup System (VISTA) Option: "VA


1.I BCBU INIT Started Feb 20, 2003@17:17:04 and finished Feb 20, 2003@17:2
 Select from 1 to 1
 or enter ?, A, I, D, F, S, P, M, R, or ^ to exit: 1
Processed Alert Number 1
 BCBU INIT Started Feb 20, 2003@17:17:04 and finished Feb 20, 2003@17:27:57.
556
```

Menu option from the BCBU Contingency Workstation for parameter settings

```
Select BCMA Backup System (Wrkstn) Option: MM  BCMA Backup System Management
Menu

   EL     BCMA Backup System Error Log
   PE     Edit Workstation Parameter Settings
   PO     Purge Orders Past X days old

Select BCMA Backup System Management Menu Option: PE  Edit Workstation
Parameter Settings

Workstation Parameter ONE
                     BCBU Workstation Parameter Setup

--------------------------------------------------------------------------------

DEFAULT DAYS FOR MAR: 7

DEFAULT MAR PRINTER: BCBU

PURGE ORDER DAYS:

PURGE PATIENT:

MED-LOG NUMBER:
________________________________________________________________________________
Exit     Save     Refresh
```

Option Descriptions

```
PSB BCBU MANAGEMENT MENU
BCMA Backup System Management Menu

This Menu contains all Management options for the BCMA Contingency
(Workstation Menu)

TYPE: menu
ITEM: PSB BCBU ERROR LOG
ITEM: PSB BCBU WRKSTN PARAMETER EDIT
ITEM: PSB BCBU WRKSTN PURGE ORDERS

PSB BCBU ERROR LOG
BCMA Backup System Error Log

This option is used to view the Error Log. (Workstation Menu)

TYPE: run routine            Routine:       ALPBELOG

PSB BCBU WRKSTN PARAMETER EDIT
Edit Workstation Parameter Settings

This option will allow the user to edit Site definable parameter settings for
the BCMA Contingency Workstation. (Workstation Menu)

TYPE: ScreenMan
  DIC {DIC}: ALPB(53.71,                DIC(0): A
  DIC(A): Workstation Parameter:        DR{DDS}: [PSB BCBU PARAMETERS]
  DDSFILE: 53.71                        DDSPAGE: 1

PSB BCBU WRKSTN PURGE ORDERS
Purge Orders Past X days old

This option purges order information based on stop date first. Purge is also
based on parameter setting for number of days to hold patient orders (default
is 7 days) and parameter setting for number of days to hold patient record
(default is 30 days with no order information).  (Workstation Menu)

TYPE: run routine             Routine:      ALPBOP

PSB BCBU WRKSTN MAIN
This is the main menu for the BCMA Backup system -- the ward workstation
containing the BCMA backup/contingency data. (Workstation Menu)

TYPE: menu
ITEM: PSB BCBU SHOW PATIENT
ITEM: PSB BCBU PRINT MAR ALL
ITEM: PSB BCBU PRINT MAR PATIENT
ITEM: PSB BCBU PRINT MAR WARD
ITEM: PSB BCBU MANAGEMENT MENU
ITEM: PSB BCBU WARD LIST
ITEM: PSB BCBU PRINT BLK MAR
```

PSB BCBU SHOW PATIENT
List/Display Orders

This option will display orders to the screen by individual patient.
(Workstation Menu)

TYPE: run routine ROUTINE: ALPBSPAT

PSB BCBU SHOW WARD
Display Orders for Selected Ward

This option will display orders to the screen by Ward. (Workstation Menu)

TYPE: run routine ROUTINE: ALPBSWRD

PSB BCBU PRINT MAR ALL
Print MAR for All Wards

This option prints a MAR report for all wards. (Workstation Menu)

TYPE: run routine ROUTINE: ALPBPALL

PSB BCBU PRINT MAR PATIENT
Print MAR for Selected Patient

This option prints a MAR report by individual patients. (Workstation Menu)

TYPE: run routine ROUTINE: ALPBPPAT

PSB BCBU PRINT MAR WARD
Print MAR for Selected Ward

This option prints a MAR report by individual wards. (Workstation Menu)

TYPE: run routine ROUTINE: ALPBPWRD

PSB BCBU WARD LIST
List of Wards in BCMA Backup File

This option will display all the wards available on the workstation.
(Workstation Menu)

TYPE: run routine ROUTINE: WARDLIST^ALPBUTL

PSB BCBU PRINT BLK MAR
Print Blank Mar for Selected Patient

This option allows the user to select a patient from the BCMA contingency and print a blank 3 or 7 day MAR. The MAR will only contain patient info.

TYPE: run routine ROUTINE: ALPBBK

PSB BCBU VISTA MAIN
BCMA Backup System (VISTA)

```
This is the Primary Menu for the BCMA Backup Contingency. (VISTA Menu)

TYPE: menu
ITEM: PSB BCBU INIT WRKSTN DFT
ITEM: PSB BCBU INIT WRKSTN DIV
ITEM: PSB BCBU LINK ASSOCIATIONS
ITEM: PSB BCBU USER INIT
ITEM: PSB BCBU INIT SINGLE PT

PSB BCBU INIT WRKSTN DFT
Default Workstation Initialize

This option is used to initialize Workstations that are linked as default.
(VISTA Option)

TYPE: run routine       ROUTINE: OPT^ALPBIND

PSB BCBU INIT WRKSTN DIV
Divisional Workstation Initialize

This option is used to initialize Workstations that are linked by Division.
(VISTA Option)

TYPE: run routine       ROUTINE: OPT^ALPBIN

PSB BCBU LINK ASSOCIATIONS
Associate Backup Workstations with a Division

For sites running the REAL-TIME BCMA BACKUP interface, use this option to
assign your backup workstations to specific divisions. If you are not a
multidivisional site, associate all backup workstations with a single
division.

When HL7 events occur, the division associated with the patient will be used
to determine which workstations will get the message.  (VISTA Menu)

TYPE: run routine       ROUTINE: ALPBPARM

PSB BCBU USER INIT
Initialize a Backup Workstation with BCMA Users

This option searches the VISTA New Person file for authorized BCMA users and
generates a version 2.4 HL7 message. Messages are addressed dynamically based
on the parameter definitions for BCMA Backup using divisions or the default
group.

TYPE: run routine       ROUTINE: INIT^ALPBGEN2

PSB BCBU INIT SINGLE PT
Single Patient Init

This option will send inpatient orders to the BCMA Contingency workstation
for a single patient.

TYPE:  run routine      ROUTINE:  SNDPT^ALPBIND
```

Technical Information

HL7 Parameters

PSB BCBU CLIENT

ACTIVE/INACTIVE: ACTIVE
HL7 ENCODING CHARACTERS: ~|\&

PSB BCBU SERVER

ACTIVE/INACTIVE: ACTIVE
HL7 ENCODING CHARACTERS: ~|\&
PSB PMU RECV
ACTIVE/INACTIVE: ACTIVE
COUNTRY CODE: USA
HL7 ENCODING CHARACTERS: ~&^\
HL7 FIELD SEPARATOR: |

PSB PMU SEND

ACTIVE/INACTIVE: ACTIVE
COUNTRY CODE: USA
HL7 ENCODING CHARACTERS: ~&^\
HL7 FIELD SEPARATOR: |

HL7 Message Examples

Unit Dose Orders

```
PID^^488-36-
5850~~^10748~2~M10^^BCMAPATIENT~TWO~^^19350517^M^^^^^^^^^^000002222
PV1^1^I^4E M-KC~SE403~3^^^^5468~BCMAPROVIDER~ONE~^^^^^^^^^^NSC VETERAN
ORC^XX^~OR^1U~PS^^DC~discontinued^^^^199709191028-
0400^33~BCMAPROVIDER,ONE^^7356~BCMAPHARMACIST,ONE^^^199709191028-
0400^~~99ORN~~~^^
RXO^~~~~~99PSP^^^^^^^^^^^^^^^^
RXE^&&2&~Q4H PRN&~~199709191028-0400~19970920120402-
0400~~~^326.2485~OXYCODONE HCL 5MG/ACETAMINOPHEN
        325MG TAB~99NDF~7106~OXYCODONE 5MG/ACETAMINOPHEN 325MG
TAB UD~99PSD^^^~~~0~~99PSU^~~~~~99PSF^^^^^^^^24133~BCMAPROVIDER,TWO
       ~99NP^^^^^^^^^^^^^~~~~~99PSU
RXR^~~~1~ORAL~99PSR^^^^
ZRX^^^^^24133~BCMAPROVIDER,TWO~99NP^
```

IV Orders

```
 PID^^488-36-
5850~~^10748~2~M10^^BCMAPATIENT~TWO~^^19350517^M^^^^^^^^^^000002222
 PV1^1^I^4E M-KC~SE403~3^^^^5468~BCMAPROVIDER~ONE~^^^^^^^^^^NSC VETERAN
 ORC^XX^8547404;1~OR^53V~PS^^CM~finished/verified by
pharmacist(active)^^^^20021206135950-0400^24133~BCMAPROVIDER,TWO
^^24133~BCMAPROVIDER,TWO^^^200212061359-
         0400^~~99ORN~~~^^
 RXO^~~~1062~MULTIVITAMIN INJ,SOLN~99PSP^^^^^^^^^^^^^^^^
 RXE^~&~~200212061359-0400~200212071400-
0400^^^^^^^^^^^^^24133~BCMAPROVIDER,TWO~99NP^^^^^^^^^10^~~~~ml/hr~PSU^^
 NTE^21^L^I would like to enter these provider comments
 RXC^A^~~~1062~MULTIVITAMIN~99PSP^10^~~~PSIV-1~ML~99OTH^^^^^^^^^^^^^^^^^^^^
 RXC^A^~~~688~FOLIC ACID~99PSP^2^~~~PSIV-4~MG~99OTH^^^^^^^^^^^^^^^^^^^^
 RXC^A^~~~1488~TRACE ELEMENTS~99PSP^2^~~~PSIV-1~ML~99OTH^^^^^^^^^^^^^^^^^^^^
 RXC^B^~~~490~DEXTROSE 5%/WATER~99PSP^1000^~~~PSIV-
1~ML~99OTH^^^^^^^^^^^^^^^^^^^^
 ZRX^^^N^^24133~BCMAPROVIDER,TWO~99NP^IV
```

Med Log

```
PID^^488-36-
5850~~^10748~2~M10^^BCMAPATIENT~TWO~^^19350517^M^^^^^^^^^^000002222
 PV1^1^I^4E M-KC~SE403~3^^^^5468~BCMAPROVIDER~ONE~^^^^^^^^^^NSC VETERAN
 ORC^ML^^330U~PS^^G~GIVEN^^^^20010414131522-0400^15454~BCMAPROVIDER,THREE
```

Parameter Definitions

PSB BKUP DEFAULT

DISPLAY TEXT: Package-specific 'default' Logical Links
MULTIPLE VALUED: Yes
INSTANCE TERM: Logical Link
VALUE DATA TYPE: pointer
VALUE DOMAIN: 870
VALUE HELP: Enter the HL7 logical link
INSTANCE DATA TYPE: pointer
INSTANCE DOMAIN: 870
INSTANCE HELP: Enter the HL7 logical link
DESCRIPTION: This parameter is used by the BCMA Backup system to route messages to a "default" group of HL7 Logical Links that are associated with the BCMA package rather than individual divisions. When the default group is defined, all messages will be routed to this group rather than using division-based grouping under the following conditions:

1. If a call is made to the API, GET^ALPBPARM, and the division parameter is not present or null.
2. If a call is made to the API, GET^ALPBPARM, and the division specified has no logical links associated with it.

   PRECEDENCE: .5
   ENTITY FILE: PACKAGE

PSB BKUP MACHINES

DISPLAY TEXT: Division-specific Logical Links
MULTIPLE VALUED: Yes
INSTANCE TERM: Logical Link
VALUE DATA TYPE: Pointer
VALUE DOMAIN: 870
VALUE HELP: Enter the HL7 Logical Link
INSTANCE DATA TYPE: pointer
INSTANCE DOMAIN: 870
INSTANCE HELP: Enter the HL7 Logical Link
DESCRIPTION: This parameter defines the BCMA Backup Logical Links that may be associated with a division when there are one or more divisions at a site.
PRECEDENCE: 1
ENTITY FILE: DIVISION

PSB BKUP ONLINE

DISPLAY TEXT: BCMA Contingency Online
VALUE DATA TYPE: yes/no
DESCRIPTION: This parameter is used by the BCMA Backup system to activate the Contingency software. If the value is set to NO, then no HL7 messages will be sent to the Workstation. This does not affect the workstation initialization option.
PRECEDENCE: 1
ENTITY FILE: PACKAGE

PSB BKUP IPH

DISPLAY TEXT: BCMA Contingency Active Pharm Order
VALUE DATA TYPE: numeric
DESCRIPTION: The BCMA Backup Contingency software uses this parameter. During the Workstation initialization process, this tells the process how many days of historic Inpatient Medication Orders to capture. It is based off the fact the order was active during that time.
PRECEDENCE: 1
ENTITY FILE: PACKAGE

PSB BKUP MEDLG

DISPLAY TEXT: BCMA Contingency MedLog DFT
VALUE DATA TYPE: numeric
DESCRIPTION: The BCMA Backup Contingency software uses this parameter. During the Workstation initialization process, this tells the process how many days of historic Med Log entries of Inpatient Medication Orders to capture.
PRECEDENCE: 1
ENTITY FILE: PACKAGE

List Templates

PSB ERROR LOG

TYPE OF LIST: PROTOCOL
RIGHT MARGIN: 80
TOP MARGIN: 4
BOTTOM MARGIN: 20
OK TO TRANSPORT?: OK
USE CURSOR CONTROL: YES
PROTOCOL MENU: PSB ERROR LOG MENU
SCREEN TITLE: BCMAbu Error Log
ALLOWABLE NUMBER OF ACTIONS: 1
AUTOMATIC DEFAULTS: YES
HIDDEN ACTION MENU: VALM IDDEN ACTIONS
ARRAY NAME: ^TMP("ALPBELOG",$J)
EXIT CODE: D EXIT^ALPBELOG
HEADER CODE: D HDR^ALPBELOG
HELP CODE: D HELP^ALPBELOG
ENTRY CODE: D INIT^ALPBELOG

PSB SELECT ORDERS

TYPE OF LIST: PROTOCOL
RIGHT MARGIN: 80
TOP MARGIN: 7
BOTTOM MARGIN: 19
OK TO TRANSPORT?: OK
USE CURSOR CONTROL: YES
PROTOCOL MENU: PSB ORDERS MENU
SCREEN TITLE: BCMAbu ACTIVE Orders List
ALLOWABLE NUMBER OF ACTIONS: 1
HIDDEN ACTION MENU: VALM HIDDEN ACTIONS
ARRAY NAME: ^TMP("ALPBORDS",$J)
ITEM NAME: OrderNum
COLUMN: 2
WIDTH: 10
DISPLAY TEXT: Order No.
ITEM NAME: OrderType
COLUMN: 22
WIDTH: 4
DISPLAY TEXT: Type
ITEM NAME: Status
COLUMN: 14
WIDTH: 7

DISPLAY TEXT: Status
ITEM NAME: Meds
COLUMN: 28
WIDTH: 45
DISPLAY TEXT: Medication(s)
ITEM NAME: SelNum
COLUMN: 2
WIDTH: 5
DISPLAY TEXT: Rec#
EXIT CODE: D EXIT^ALPBSP1
HEADER CODE: D HDR^ALPBSP1
HELP CODE: D HELP^ALPBSP1
ENTRY CODE: D INIT^ALPBSP1

PSB SELECT PATIENT

TYPE OF LIST: PROTOCOL
RIGHT MARGIN: 80
TOP MARGIN: 4
BOTTOM MARGIN: 15
OK TO TRANSPORT?: OK
USE CURSOR CONTROL: YES
PROTOCOL MENU: PSB PATIENT MENU
SCREEN TITLE: BCMAbu Patient List (All)
ALLOWABLE NUMBER OF ACTIONS: 1
HIDDEN ACTION MENU: VALM HIDDEN ACTIONS
ARRAY NAME: ^TMP("ALPBPLIST",$J)
ITEM NAME: RecNum
COLUMN: 2
WIDTH: 6
DISPLAY TEXT: Rec #
ITEM NAME: Patient
COLUMN: 2
WIDTH: 30
DISPLAY TEXT: Patient
ITEM NAME: SSN
COLUMN: 33
WIDTH: 9
DISPLAY TEXT: SSN
ITEM NAME: WARD
COLUMN: 43
WIDTH: 15
DISPLAY TEXT: Ward
ITEM NAME: ROOM

COLUMN: 62
WIDTH: 5
DISPLAY TEXT: Room
ITEM NAME: BED
COLUMN: 72
WIDTH: 5
DISPLAY TEXT: Bed
EXIT CODE: D EXIT^ALPBSPAT
HEADER CODE: D HDR^ALPBSPAT
HELP CODE: D HELP^ALPBSPAT
ENTRY CODE: D INIT^ALPBSPAT

PSB SHOW ORDERS

TYPE OF LIST: DISPLAY
RIGHT MARGIN: 80
TOP MARGIN: 7
BOTTOM MARGIN: 20
OK TO TRANSPORT?: OK
USE CURSOR CONTROL: YES
SCREEN TITLE: BCMAbu Selected Order(s)
ALLOWABLE NUMBER OF ACTIONS: 1
AUTOMATIC DEFAULTS: YES
HIDDEN ACTION MENU: VALM HIDDEN ACTIONS
ARRAY NAME:^TMP("ALPBFORM",$J)
EXIT CODE: D EXIT^ALPBSP2
HEADER CODE: D HDR^ALPBSP2
HELP CODE: D HELP^ALPBSP2
ENTRY CODE: D INIT^ALPBSP2

HL Communication Server Parameters

These parameters exist only on the workstations and is included in the .dat file.

ONE: 1 DOMAIN: BCMABU.MED.VA.GOV
DEFAULT PROCESSING ID: training INSTITUTION: SOFTWARE SERVICE
DEFAULT NUMBER INCOMING FILERS: 2 DEFAULT NUMBER OUTGOING FILERS: 2
PURGE COMPLETED MESSAGES: 2 PURGE AWAITING ACK MESSAGES: 2
PURGE ALL MESSAGES: 4

Select HL LOGICAL LINK NODE: LISTNER

NODE: LISTNER LLP TYPE: TCP
DEVICE TYPE: Single-threaded Server
AUTOSTART: Enabled
SHUTDOWN LLP ?: NO
QUEUE SIZE: 10 RE-TRANSMISSION ATTEMPTS: 2
BLOCK SIZE: 256 READ TIMEOUT: 2
ACK TIMEOUT: 10 EXCEED RE-TRANSMIT ACTION: restart
TCP/IP PORT: 10000 TCP/IP SERVICE TYPE: SINGLE LISTENER
PERSISTENT: NO RETENTION: 120

Technical Information

Files Associated with GT.M/Linux BCMA:

The following files are provided with the GT.M version of Bar Code Medication Administration Backup System (BCBU) and are unpacked from the bcma_files.tar.gz file into $HOME of the BCMA manager account.

.bashrc – this is the BCMA manager's *$HOME/.bashrc* file. This file defines GT.M related global variables, sets convenient aliases and sets terminal characteristics. This file may be edited but all GT.M variable and terminal definitions should be retained to guarantee the proper functioning of the GT.M database.

bcmabashrc – *install_bcma* creates a generic "bcma" Linux account tied to VistA. *bcmabashrc* is renamed to */home/bcma/.bashrc* and is called with each "bcma" user login. The call to this file ties the user to VistA and prevents access to the Linux or GT.M level as well as defining GT.M related global variables.

bcma.gld – this is the GT.M global directory file which defines the location of the BCMAbu database. *install_bcma* edits this file automatically to account for the directory structure specified by the installer. The GT.M database utility, GDE, accesses this file.

cronjrnclean – this file is used to generate the crontab procedure (found in /var/spool/tar/bcma_manager_name) which runs nightly to flip the GT.M journal file, remove old journal files and remove temporary GT.M process related files in the manager's $HOME. This file is only used once during the BCMA install.

gcomp - run this file at your GT.M manager to recompile all M routines. At times, compiled objects may end up with the wrong user ownership (for example, if patches were installed and run as root). Run this script to correct such situations.

jrnclean – this file is called by /var/spool/tar/bcma_manager_name nightly at 1:00am to flip the GT.M journal file, remove old journal files and remove temporary GT.M process related files in the BCMA manager's $HOME.

jrnoff - this file may be used to turn journaling off. Note that journaling is automatically enabled with every reboot of the system by *rc.local*.

jrnon – this file may be used to turn journaling on or flip the current journal file to a new one. It is called by *jrnclean*. Journal files are found in $HOME/jrn of the bcma manager.

netmail_start – this file is called by *rc.local* during runlevel 5-system startup to start network mail on port 25. If netmail needs to be started manually, run this file as root (other users will not have the privileges to connect a process to port 25).

rc.local – this is a user-editable Linux file found in /etc/rc.d and is called during system startup and shutdown. This file calls *$HOME/recoverall*, *$HOME/jrnon*, *$HOME/taskman_start* and *$HOME/netmail_start* during system startup. It will call *$HOME/zgstop* during system shutdown. If *rc.local* is successful in each of these calls, the following empty files will be created in $HOME of the BCMA manager account: *recoverys*, *TaskMan*, *netmails*, and *rundowns*.

recoverall – this file is called by *rc.local* during system startup and attempts to recover the database should the system be shutdown uncleanly.

taskman_start – this file starts TaskMan automatically during system startup. If TaskMan needs to be started manually, run *taskman_start* as root (TaskMan automatically starts HL7 processes – the LISTNER link needs to connect with port 10000).

VistA – this script resides in the /home/bcma and /home/gtm manager directories and is called by the icon file $HOME/.gnome-desktop/ VistA -icon for the respective users

***-icon -** these are the desktop icon files. The BCMA and GT.M manager users both have the VistA -icon, which will bring the user to the access/verify prompts. In addition to this, the GT.M manager user will also have the term-icon and editor-icon on its desktop to open a terminal session and gedit text editor, respectively.

zgstop - this file is called by *rc.local* during system shutdown to shutdown GT.M cleanly and performs a recovery if needed. Call this file as root if GT.M needs to be shutdown (only the root user will be permitted to stop ALL GT.M processes – if another user call zgstop, only its own processes will be shutdown). This file is derived from */usr/local/gtm/gstop*.

Technical Information

Adding a BCMA printer to the Cache/NT Contingency system:

Contingency Workstation (VistA) printer:

Slave printers are defined in VistA as P22O/102 SLAVE CACHE/NT.
Test the printer through VistA.

DEVICE file entry:

```
NAME: P22O/102 SLAVE CACHE/NT           $I: 0
  ASK DEVICE: NO                        ASK PARAMETERS: NO
  LOCATION OF TERMINAL: slave device for Cache/NT
MNEMONIC: SLAVE
  SUBTYPE: C-VT220                      TYPE: TERMINAL
```

Network printer:

From the NT menu:

1. ***Start/Settings/Printers/Add Printer*.**
2. Select the ***My Computer*** radio button then ***Next*** to continue.
3. Click the ***Add Port*** button.
4. Double click the ***LPR Port*** then fill in the IP address of the device and the name then ***Close*** to continue.
5. Make sure the box for the newly created port is checked then ***Next*** to continue.
6. Select the printer driver (note - you may need the NT install CD handy for this step) then ***Next*** to continue.
7. Enter the printer name then ***Next*** to continue
   Note: this is the value that will be used in the $I below.
8. Select shared or not shared then ***Next*** to continue.
9. Try printing a test page; at this point, NT might start requesting the install CD for specific drivers.

From the W2K menu:

1. ***Start/Settings/Printers/Add Printer***.
2. ***Next*** at the welcome add printer wizard box.
3. Select the ***Local Printer*** radio button and uncheck the automatic detection for plug and play devices then ***Next*** to continue.
4. Select the ***Create a new port*** radio button then select either ***LPR*** or ***Standard TCPIP port*** from the dropdown menu.
   - For LPR:
     - Fill in the IP address of the device and the name, then ***Close*** to continue.

- For TCP/IP:
    - Click ***Next*** to continue in the welcome wizard window.
    - Enter the printer name or IP address then ***Next*** to continue.

5. Select the driver, then ***Next*** to continue.
6. Enter the printer name, then ***Next*** to continue
   Note: this is the value that will be used in the $I below.
7. Share or not, then ***Next*** to continue.
8. Print a test page, then ***Next*** to continue.

From within Contingency Workstation (VistA) Printer

1. No special terminal types need to be used for Cache/NT network printing. Several HP-LASER terminal types are available in the TERMINAL TYPE file as installed.
2. Create a new entry in the DEVICE file as per the example below. $I syntax is |PRN|\\bcmaservername\LPR device defined above. In the example below, the A410 printer was defined as an LPR port through NT. The server name is VHAISADHC1
3. Test the printer through VistA.

Examples:

DEVICE file entry:

```
NAME: A410                                $I: |PRN|\\VHAISADHC2\A410
  LOCATION OF TERMINAL: A410              SUBTYPE: P-HP-P16
  TYPE: TERMINAL
```

TERMINAL TYPE file entries:

```
NAME: P-HPLASER-P10                       RIGHT MARGIN: 80
  FORM FEED: #                            PAGE LENGTH: 64
  BACK SPACE: $C(8)                       OPEN EXECUTE: W *27,"E"
  CLOSE EXECUTE: W *27,"E"                PROPORTIONAL SPACING: $C(27)_"(s1P"
  DESCRIPTION: LASER PRINTER PORTRAIT MODE 10 CPI


NAME: P-HP-P16                            RIGHT MARGIN: 132
  FORM FEED: $C(12,13)                    PAGE LENGTH: 58
  BACK SPACE: $C(8)                       OPEN EXECUTE: W
$C(27),"E",$C(27),"&k2S"
  CLOSE EXECUTE: W $C(27),"E"             DESCRIPTION: HP LASER JET 16 PITCH
```

Technical Information

Adding a BCMA printer to the GT.M/Linux Contingency system:

Contingency Workstation (VistA)

From the Linux menu:

1. Select ***System Settings*** then ***Printing***.
2. In the Red Hat printer config windows click ***New*** to create a new printer queue.
3. Read the instructions then click ***Forward*** to continue.
4. Specify 'local' or 'LOCAL' as the name for the new printer and select ***local printer*** radio button, then click ***Forward*** to continue.
5. Accept ***/dev/lp0*** as printer device to use, then click ***Forward*** to continue.
6. Select the driver for your local printer, then click ***Forward*** to continue. ***Postscript Printer*** is usually acceptable for HP printers.
7. Click ***Apply*** button to restart LPD.
8. You may test the printer by selecting it in the Red Hat printer config window, then selecting ***Test*** from the horizontal menu.

From within Contingency Workstation (VistA)

1. P220/102 SLAVE GTM/LINUX entries are already pre-defined in VistA DEVICE file.
2. Test the printer through VistA.

DEVICE file entries:

```
NAME: P220/102 SLAVE GTM/LINUX          $I: $HOME/slave.dat
  ASK DEVICE: NO                        ASK PARAMETERS: NO
  LOCATION OF TERMINAL: basic slave device for gtm/linux
  ASK HOST FILE: NO                     SUPPRESS FORM FEED AT CLOSE: YES
  OPEN PARAMETERS: newversion
MNEMONIC: SLAVE
  SUBTYPE: P-SLAVE TEXT GTM/LINUX       TYPE: HOST FILE SERVER
```

```
NAME: P220/102 HP 80 SLAVE GTM/LINUX    $I: $HOME/slave.dat
  ASK DEVICE: NO                        ASK PARAMETERS: NO
  LOCATION OF TERMINAL: HP 80 slave device for gtm/linux
  ASK HOST FILE: NO                     SUPPRESS FORM FEED AT CLOSE: YES
  OPEN PARAMETERS: newversion
MNEMONIC: SLAVE
  SUBTYPE: P-SLAVE HP 80 GTM/LINUX      TYPE: HOST FILE SERVER
```

```
NAME: P220/102 HP 132 SLAVE GTM/LINU    $I: $HOME/slave.dat
  ASK DEVICE: NO                        ASK PARAMETERS: NO
  LOCATION OF TERMINAL: HP 132 slave device for gtm/linux
  ASK HOST FILE: NO                     SUPPRESS FORM FEED AT CLOSE: YES
  OPEN PARAMETERS: newversion
MNEMONIC: SLAVE
  SUBTYPE: P-SLAVE HP 80 GTM/LINUX      TYPE: HOST FILE SERVER
```

TERMINAL TYPE file entries:

```
NAME: P-SLAVE HP 132 GTM/LINUX          RIGHT MARGIN: 132
  FORM FEED: #                          PAGE LENGTH: 60
  BACK SPACE: $C(8)
  OPEN EXECUTE: W *27,"E",*27,"(s16.7H",*27,"&k3G"
  CLOSE EXECUTE: W *27,"E" U IO K IO(1,IO) C IO ZSYSTEM "lpr -lr "_IO
```

```
NAME: P-SLAVE HP 80 GTM/LINUX           RIGHT MARGIN: 80
  FORM FEED: #                          PAGE LENGTH: 60
  BACK SPACE: $C(8)                     OPEN EXECUTE: W *27,"E",*27,"&k3G"
  CLOSE EXECUTE: W *27,"E" U IO K IO(1,IO) C IO ZSYSTEM "lpr -lr "_IO
```

```
NAME: P-SLAVE TEXT GTM/LINUX            RIGHT MARGIN: 80
  FORM FEED: #                          PAGE LENGTH: 60
  BACK SPACE: $C(8)
  CLOSE EXECUTE: U IO K IO(1,IO) C IO ZSYSTEM "lpr -r "_IO
```

Network printer:

From the Linux menu:

1. Select ***System Settings*** then ***Printing***.
2. In the Red Hat printer config windows click ***New*** to create a new printer queue
3. Read the instructions then click ***Forward*** to continue.
4. Specify the name of the new printer (example: A405) and select either the ***Unix Printer*** or ***Jetdirect Printer*** radio button as type (**Note:** Unix printer uses port 515 and Jetdirect uses port 9100), then click ***Forward*** to continue.
    a. if Unix printer: Enter the printer hostname or IP in the ***Server*** box - no need to enter queue information.
    b. if Jetdirect printer: Enter the printer hostname or IP in the ***Printer IP*** box - accept 9100 as the port value then click ***Forward*** to continue.
5. Select the driver for your network printer, then click ***Forward*** to continue**.**
   Note: ***Postscript Printer is*** usually acceptable for HP printers.
6. Click ***Apply*** button to restart LPD.
7. You may test the printer by selecting it in the Red Hat printer config window, then selecting ***Test*** from the horizontal menu.

From within Contingency Workstation (VistA)

1. P-TCP * GTM/LINUX entries are already pre-defined in VistA TERMINAL TYPE file. You may use the VA FileMan *Transfer File Entries* option to create new terminal types using these as templates. Edit the OPEN EXECUTE fields accordingly to vary print characteristics.

2. Create a new DEVICE file entry.
    a. **Note:** The name of the new DEVICE must begin with the name of the Linux printer created above FOLLOWED BY A SPACE then a description (Example: "A405 - ADMIN 10/6/UP"). The CLOSE EXECUTE field of the TERMINAL TYPE being used parses the queue name from the first space backward)
    b. I$'s for network printers are normally /home/*Linux bcma mgr acct*/hfs/devicename.txt
    c. Device TYPE - HFS
3. Test the printer through VistA.

Examples:

DEVICE file entries:

```
NAME: A405 10/6/UP                        $I: /home/gtmmgr/hfs/A405.dat
  ASK DEVICE: NO                          ASK PARAMETERS: NO
  LOCATION OF TERMINAL: A405              ASK HOST FILE: NO
  SUPPRESS FORM FEED AT CLOSE: YES        OPEN PARAMETERS: newversion
  SUBTYPE: P-TCP 10/6/UP GTM/LINUX        TYPE: HOST FILE SERVER
```

```
NAME: A405 16/6/UP                        $I: /home/gtmmgr/hfs/A405.dat
  ASK DEVICE: NO                          ASK PARAMETERS: NO
  LOCATION OF TERMINAL: A405              ASK HOST FILE: NO
  SUPPRESS FORM FEED AT CLOSE: YES        OPEN PARAMETERS: newversion
  SUBTYPE: P-TCP 16/6/UP GTM/LINUX        TYPE: HOST FILE SERVER
```

TERMINAL TYPE file entries:

```
NAME: P-TCP 10/6/UP GTM/LINUX             SELECTABLE AT SIGN-ON: NO
  RIGHT MARGIN: 80                        FORM FEED: #
  PAGE LENGTH: 60                         BACK SPACE: $C(8)
  OPEN EXECUTE: W *27,"E",*27,"&k3G"
  CLOSE EXECUTE: W *27,"E" U IO K IO(1,IO) C IO ZSYSTEM "lpr -lrP
"_$E(ION,1,$F(ION," ")-1)_" "_IO
```

```
NAME: P-TCP 16/6/UP GTM/LINUX             SELECTABLE AT SIGN-ON: NO
  RIGHT MARGIN: 132                       FORM FEED: #
  PAGE LENGTH: 60                         BACK SPACE: $C(8)
  OPEN EXECUTE: W *27,"E",*27,"(s16.7H",*27,"&k3G"
  CLOSE EXECUTE: W *27,"E" U IO K IO(1,IO) C IO ZSYSTEM "lpr -lrP
"_$E(ION,1,$F(ION," ")-1)_" "_IO
```

Workstation Queued Tasks

The following tasks should be queued to run on the workstation. All except XMMGR-PURGE-AI-XREF (which has a rescheduling frequency of 7D) should have a rescheduling frequency of 1D. The GT.M and Cache dat files where released with these jobs scheduled properly but they should be checked, once TaskMan is started, to make sure they have run and are being rescheduled.

The following capture shows how to list the currently queued workstation tasks and verifies that the HL PURGE TRANSMISSIONS task has been rescheduled. Check the TaskMan error log should the jobs not appear to be run or scheduled properly.

```
Select Systems Manager Menu Option:

          Core Applications ...
          Device Management ...
          Menu Management ...
          Programmer Options ...
          Operations Management ...
          Spool Management ...
          Information Security Officer Menu ...
          Taskman Management ...
          User Management ...
          Application Utilities ...
          Capacity Management ...
          HL7 Main Menu ...

Select Systems Manager Menu Option: TASKman Management

          Schedule/Unschedule Options
          One-time Option Queue
          Taskman Management Utilities ...
          List Tasks
          Dequeue Tasks
          Requeue Tasks
          Delete Tasks
          Print Options that are Scheduled to run
          Cleanup Task List
          Print Options Recommended for Queueing

Select Taskman Management Option: SCHEdule/Unschedule Options

Select OPTION to schedule or reschedule: ?
    Answer with OPTION SCHEDULING NAME
   Choose from:
   XQBUILDTREEQUE     (R)
   XQ XUTL $J NODES     (R)
   XUTM QCLEAN     (R)
   XUERTRP AUTO CLEAN     (R)
   XMCLEAN     (R)
   XMAUTOPURGE     (R)
```

```
   XMMGR-PURGE-AI-XREF     (R)
   HL PURGE TRANSMISSIONS     (R)
   HL TASK RESTART     (R)
   HL AUTOSTART LINK MANAGER     (R)
   PSB BCBU WRKSTN PURGE ORDERS     (R)

     You may enter a new OPTION SCHEDULING, if you wish
     Enter OPTION to schedule.
     Only allow Action, Print, and Run type options.
 Answer with OPTION NAME
 Do you want the entire OPTION List? N  (No)
Select OPTION to schedule or reschedule: PSB BCBU WRKSTN PURGE ORDERS
Purge Orders Past X days old
         ...OK? Yes// <ENTER>  (Yes)
      (R)
                          Edit Option Schedule
    Option Name: PSB BCBU WRKSTN PURGE ORDERS
    Menu Text: Purge Orders Past X days old              TASK ID: 8709
  ____________________________________________________________________
  QUEUED TO RUN AT WHAT TIME: JUN 3,2003@01:30

DEVICE FOR QUEUED JOB OUTPUT:

 QUEUED TO RUN ON VOLUME SET:

      RESCHEDULING FREQUENCY: 1D

             TASK PARAMETERS:

            SPECIAL QUEUEING:


____________________________________________________________________________
```

Quick Reference Installation Checklist

Action	Where	Completed
1. Install patch PSB*3.0*8	VistA	_____
A. FTP Software from an OI Field Office		_____
B. Install using Kids		_____
2. Workstation Setup		
Note: Ensure that the workstation has a static IP Address.		
A. Windows/Caché		
1. Setup Caché – InterSystems supplies software. Example of install can be found in the manual, "Bar Code Medication Administration Backup System (BCBU) InterSystems Cache Installation Setup".	Workstation	_____
2. Shutdown Caché		_____
3. Copy cache.dat file that was downloaded from the FTP site into C:\CACHESYS\folder. (If asked to replace file, answer yes.)		_____
4. Remove the Read-Only attribute from the cache.dat file.		_____
5. Ensure telnet is enabled in Caché Configuration.		_____
6. Move ZSTU routine from VistA namespace to %SYS namespace.		_____
7. Setup Telnet and Terminal users using Caché Control Panel.		_____
8. Stop and Restart Caché.		_____
9. Create BCMA Backup shortcut.		_____
B. Linux/GT.M		
1. Install Linux onto clean system	Workstation	_____
2. Example of install can be found in the manual, "Bar Code Medication Administration Backup System (BCBU) Linux Installation Setup. Make note of username entered and its password for future use. Also, remember the root password.		_____

Quick Reference Installation Checklist

Action	Where	Completed
3. Sign into Linux using the user created during the installation.		_____
4. Enter super user mode ($ su)		_____
5. Copy downloaded Linux files to an accessible location.		_____
6. Ensure downloaded file has correct permissions.		_____
7. Run the install script. (./install_bcma) **Note:** BCMA manager account will be the user you created during the Linux install.		_____
8. Edit the TaskMan Site Parameters to enter the correct Box-Volume pair.		_____
9. Restart TaskMan.		_____
3. Workstation Database Initialization		_____
A. On new installs check the parameter PSB BKUP ONLINE VALUE=yes	VistA	_____
B. Add a new link using HL7 options.	VistA	_____
C. Associate the new link to a division using PSB BCBU VistA MAIN option.	VistA	_____
D. Start the new link using HL7 options.	VistA	_____
E. Check the HL7 Site Parameter to make sure the field, "Is this a Production or Test Account", is set correctly. It must match the setting in the Vista account sending the messages	Workstation	_____
F. Start the LISTNER link using HL7 options.	Workstation	_____
G. Review the Parameter settings and verify that all task jobs have been queued properly. This is described in the Workstation Queued Tasks section of this documentation.	Workstation	_____
H. Initialize the workstation using Default or Divisional Workstation initialize option.	VistA	_____

List/Display Orders

```
Select BCMA Backup System (Wrkstn) Option: SO <ENTER>  List/Display Orders
BCMAbu Patient List (All)     Mar 29, 2005@07:38:33        Page:    1 of    1
BCMA Backup System :: Patient Listing
 Patient                        SSN       Ward              Room      Bed
 BCMAPATIENT1,ONE               000000001 4 MED             M20       A
 BCMAPATIENT2,TWO               000000002 3W GS             NW304     2









          Enter ?? for more actions
SP   Select Patient       LW   List by Ward         LA   List All Patients
Select Item(s): Quit// SP <ENTER>  Select Patient
Select PATIENT: BCMAPATIENT1,ONE <ENTER>


BCMAbu ACTIVE Orders List     Mar 29, 2005@07:39          Page:    1 of    1
BCMAPATIENT1,ONE                 SSN: 000000001  Ward: 4 MED
This record last updated: Mar 29, 2005@07:29:43  Room: M20 Bed: A
Allergies: DYE,CATHETER; DILTIAZEM; SULFA; IBUPROFEN
------------------------------------------------------------------------------
 Order No.   Status  Type  Medication(s)
 16U         Active   UD   SULFADIAZINE 500MG TAB (500MG ORAL QD)









          Enter ?? for more actions
SO  Select Order          L1  List Active Orders    L2  List All Orders
Select Action: Quit// SO <ENTER>  Select Order
Select order number, more than one separated by a comma, or 'ALL':
```

```
Select ORDER#: ALL// 16U <ENTER>
BCMAbu Selected Order(s)      Mar 29, 2005@07:39:36        Page:    1 of    1
BCMAPATIENT1,ONE                 SSN: 000000001  Ward: 4 MED
This record last updated: Mar 29, 2005@07:29:43  Room: M20 Bed: A
Allergies: DYE,CATHETER; DILTIAZEM; SULFA; IBUPROFEN
------------------------------------------------------------------------------

 Order Number: 16U                                  Start: Mar 29, 2005@07:29:53
        Type: UNIT DOSE                              Stop: Apr 11, 2005@14:00
      Status: finished/verified by pharmacist(active)
        Drug: SULFADIAZINE 500MG TAB
        Give: 500MG ORAL QD
    Provider: BCMAPROVIDER,ONE             RPh/Entry by: BCMAPHARMACIST,ONE
 Admin. Times: 0900
------------------------------------------------------------------------------









          Enter ?? for more actions

Select Action:Quit// <ENTER>   QUIT


BCMAbu Patient List (All)     Mar 29, 2005@07:40:28        Page:    1 of    1
BCMA Backup System :: Patient Listing
 Patient                        SSN       Ward               Room      Bed
 BCMAPATIENT1,ONE               000000001 4 MED              M20       A
 BCMAPATIENT2,TWO               000000002 3W GS              NW304     2









          Enter ?? for more actions
SP   Select Patient       LW   List by Ward         LA   List All Patients
Select Item(s): Quit// LW  <ENTER> List by Ward
Wards with BCMA Backup Data on this workstation:

     3W GS
     4 MED
     4 MED-CO
```

```
Select WARD: 3W  <ENTER>
BCMAbu Patient List (Ward)    Mar 29, 2005@07:41:03        Page:    1 of    1
BCMA Backup System :: Patient Listing
 Patient                        SSN       Ward               Room      Bed
 BCMAPATIENT2,TWO               000000002 3W GS              NW304     2









          Enter ?? for more actions
SP   Select Patient       LW   List by Ward         LA   List All Patients
Select Item(s): Quit// SP <ENTER>  Select Patient
Select PATIENT: BCMAPATIENT2,TWO  <ENTER>

BCMAbu ACTIVE Orders List     Mar 29, 2005@07:41:20        Page:    1 of    1
BCMAPATIENT2,TWO                 SSN: 000000002  Ward: 3W GS
This record last updated: Mar 29, 2005@07:32:52  Room: NW304 Bed: 2
------------------------------------------------------------------------------

 Order No.   Status  Type  Medication(s)
 30U         Active   UD   EPOETIN ALFA,RECOMBINANT 4000 UNT/ML INJ (4000UNT/1ML









          Enter ?? for more actions
SO  Select Order          L1  List Active Orders    L2  List All Orders
Select Action: Quit//  <ENTER>  QUIT
```

Contingency PC Workstation Reports

Print MAR for All Wards

```
Select BCMA Backup System (Wrkstn) <TEST ACCOUNT> Option: PA  Print MAR for All Wards
Inpatient Pharmacy Orders for all wards

Report [A]LL or [C]URRENT orders? CURRENT// <ENTER>

Include Patients Without Active Medications? YES// <ENTER>

Print how many days MAR? 7// <ENTER>

Select how many BCMA Medication Log history: 1// <ENTER>

DEVICE: HOME// DEC Windows <ENTER>



MAR Ran: Jan 28, 2013@09:10:52   Inpatient Pharmacy Orders (Backup)                                                    Page:   1
PATIENT1,TEST                      SSN: 000000001   DOB: Sep 17, 1950   Sex: M
Ward: C MEDICINE                 Room: 320          Bed: 1
             This record last updated: Mar 02, 2012@10:08:57
No allergies reported to the Contingency

No Active Medication Orders were reported to the Contingency at the time the MAR was printed



|            SIGNATURE/TITLE            | INIT  | INJECTION SITES (Right or Left)       VA FORM  10-2970
|_______________________________________ |_______| 1. DELTOID           4. MED (ANTERIOR) THIGH  7. ABDOMEN
|_______________________________________ |_______| 2. VENTRAL GLUTEAL   5. VASTUS LATERALIS      8. THIGH
|_______________________________________ |_______| 3. GLUTEUS MEDIUS    6. UPPER ARM             9. BUTTOCK
|_______________________________________ |_______|10. UPPER BACK      PRN: E=Effective  N=Not Effective



MAR Ran: Jan 28, 2013@09:10:52   Inpatient Pharmacy Orders (Backup)                                                    Page:   1
PATIENT2,TEST                      SSN: 000000002   DOB: Jan 01, 1920   Sex: M
Ward: C MEDICINE                 Room: 320          Bed: 2
             This record last updated: Jan 22, 2013@15:35:08
No allergies reported to the Contingency
                                                                  Admin
Start                     Stop                                    Times    01/28  01/29  01/30  01/31  02/01  02/02  02/03
-------------------------------------------------------------------------------------------------------------------------
Jan 22, 2013@15:34        Feb 21, 2013@18:00                    | 0900   |______|______|______|______|______|______|______|
<<ASPIRIN 325MG BUFFERED TAB>>
        Give: 325MG ORAL (BY MOUTH) QD-(EVERY DAY)%0900
    Provider: BCMAPROVIDER, ONE
RPh/Entry by: BCMAPHARMACIST, ONE
     Order #: 3U          Type: UNIT DOSE
      Status: finished/verified by pharmacist(active)
BCMA MEDICATION LOG HISTORY
 No Medication Log entries are on file for this order.
-------------------------------------------------------------------------------------------------------------------------
|            SIGNATURE/TITLE            | INIT  | INJECTION SITES (Right or Left)       VA FORM  10-2970
|_______________________________________ |_______| 1. DELTOID           4. MED (ANTERIOR) THIGH  7. ABDOMEN
|_______________________________________ |_______| 2. VENTRAL GLUTEAL   5. VASTUS LATERALIS      8. THIGH
|_______________________________________ |_______| 3. GLUTEUS MEDIUS    6. UPPER ARM             9. BUTTOCK
|_______________________________________ |_______|10. UPPER BACK      PRN: E=Effective  N=Not Effective



MAR Ran: Jan 28, 2013@09:10:52   Inpatient Pharmacy Orders (Backup)                                                    Page:   1
PATIENT3,TEST                      SSN: 000000003   DOB: Jan 01, 1930   Sex: F
Ward: C MEDICINE                 Room: 321          Bed: 1
             This record last updated: Jan 18, 2013@11:54:28
No allergies reported to the Contingency
                                                                  Admin
Start                     Stop                                    Times    01/28  01/29  01/30  01/31  02/01  02/02  02/03
-------------------------------------------------------------------------------------------------------------------------
Jan 18, 2013@11:51        Feb 17, 2013@18:00                    | 0600   |______|______|______|______|______|______|______|
<<ALLOPURINOL 50MG (1/2 X 100MG) TAB>>                          | 1200   |______|______|______|______|______|______|______|
        Give: 150mg ORAL (BY MOUTH) Q6H                         | 1800   |______|______|______|______|______|______|______|
    Provider: BCMAPROVIDER, ONE                                 | 2400   |______|______|______|______|______|______|______|
RPh/Entry by: BCMAPHARMACIST, ONE
     Order #: 17U         Type: UNIT DOSE
      Status: finished/verified by pharmacist(active)
BCMA MEDICATION LOG HISTORY
 No Medication Log entries are on file for this order.
-------------------------------------------------------------------------------------------------------------------------
|            SIGNATURE/TITLE            | INIT  | INJECTION SITES (Right or Left)       VA FORM  10-2970
|_______________________________________ |_______| 1. DELTOID           4. MED (ANTERIOR) THIGH  7. ABDOMEN
|_______________________________________ |_______| 2. VENTRAL GLUTEAL   5. VASTUS LATERALIS      8. THIGH
|_______________________________________ |_______| 3. GLUTEUS MEDIUS    6. UPPER ARM             9. BUTTOCK
|_______________________________________ |_______|10. UPPER BACK      PRN: E=Effective  N=Not Effective
```

Contingency PC Workstation Reports

```
MAR Ran: Jan 28, 2013@09:10:52   Inpatient Pharmacy Orders (Backup)                                                    Page:   1
PATIENT4,TEST                      SSN: 000000004   DOB: Apr 23, 1966   Sex: M
Ward: C MEDICINE                 Room: 321          Bed: 2
            This record last updated: Oct 23, 2012@13:34:56
Allergies: HALOTHANE; MALT BARLEY; PALMOLIVE SOAP; WATERMELONS; KELP; OLEPTRO; SARDINES;
           MALTOSE; NICOTINAMIDE HYDRIODIDE/P; POLLEN; NAMENDA TITRATION PAK;
           PINE NEEDLES; PINE PRODUCTS; IBUPROFEN/PSEUDOEPHEDRINE; TALBUTAL;
           FARBITAL(NEW FORMULA); CARBONATED BEVERAGES; METHYLCELLULOSE;
           CADEXOMER IODINE; ALUMINUM ACETATE/BENZETHO; HALAZEPAM;
           **ADR** ALUMINUM HYDROXIDE/ASPIRI

No Active Medication Orders were reported to the Contingency at the time the MAR was printed



|            SIGNATURE/TITLE            | INIT  | INJECTION SITES (Right or Left)       VA FORM  10-2970
|_______________________________________ |_______| 1. DELTOID           4. MED (ANTERIOR) THIGH  7. ABDOMEN
|_______________________________________ |_______| 2. VENTRAL GLUTEAL   5. VASTUS LATERALIS      8. THIGH
|_______________________________________ |_______| 3. GLUTEUS MEDIUS    6. UPPER ARM             9. BUTTOCK
|_______________________________________ |_______|10. UPPER BACK      PRN: E=Effective  N=Not Effective
```

Contingency PC Workstation Reports

Print MAR for Selected Patient

```
Select BCMA Backup System (Wrkstn) <TEST ACCOUNT> Option: PP  Print MAR for Selected Patient

Inpatient Pharmacy Orders for a selected patient
Select PATIENT NAME: TESTPATIENT,ANOTHER <ENTER>

Report [A]LL or [C]URRENT orders? CURRENT// <ENTER>

Print how many days MAR? 7// <ENTER>

Select how many BCMA Medication Log history: 1// <ENTER>

DEVICE: HOME// DEC Windows <ENTER>

MAR Ran: Jan 28, 2013@09:25:40   Inpatient Pharmacy Orders (Backup)                                                    Page:   1
TESTPATIENT,ANOTHER                SSN: 000000006  DOB: May 04, 1960   Sex: M
Ward: C MEDICINE                  Room: 100         Bed: A
             This record last updated: Jul 30, 2012@13:47:23
No allergies reported to the Contingency

No Active Medication Orders were reported to the Contingency at the time the MAR was printed


|            SIGNATURE/TITLE            | INIT  | INJECTION SITES (Right or Left)       VA FORM  10-2970
|_______________________________________|_______| 1. DELTOID           4. MED (ANTERIOR) THIGH  7. ABDOMEN
|_______________________________________|_______| 2. VENTRAL GLUTEAL   5. VASTUS LATERALIS      8. THIGH
|_______________________________________|_______| 3. GLUTEUS MEDIUS    6. UPPER ARM             9. BUTTOCK
|_______________________________________|_______|10. UPPER BACK      PRN: E=Effective  N=Not Effective


Select BCMA Backup System (Wrkstn) <TEST ACCOUNT> Option: PP  Print MAR for Selected Patient

Inpatient Pharmacy Orders for a selected patient
Select PATIENT NAME: TESTPATIENT,ANOTHER <ENTER>

Report [A]LL or [C]URRENT orders? CURRENT// ALL <ENTER>

Print how many days MAR? 7// <ENTER>

Select how many BCMA Medication Log history: 1// <ENTER>

DEVICE: HOME// DEC Windows <ENTER>

MAR Ran: Jan 28, 2013@09:31:05   Inpatient Pharmacy Orders (Backup)                                                    Page:   1
TESTPATIENT,ANOTHER                SSN: 000000006  DOB: Apr 04, 1960   Sex: M
Ward:                             Room: 100         Bed: A
             This record last updated: Oct 23, 2012@13:34:57
No allergies reported to the Contingency

                                                                  Admin
Start                     Stop                                    Times    01/28  01/29  01/30  01/31  02/01  02/02  02/03
-------------------------------------------------------------------------------------------------------------------------------
Not on file               Not on file                            |        |******|******|******|******|******|******|******|
<<ALDESLEUKIN 22 MU/VIAL INJ>>                                   |        |******|******|******|******|******|******|******|
        Give: 22MILLION UNIT/1VIL IV PIGGYBACK Q5H               |        |******|******|******|******|******|******|******|
    Provider: BCMAPROVIDER, ONE                                  |        |******|******|******|******|******|******|******|
RPh/Entry by: BCMAPHARMACIST, ONE                                |        |******|******|******|******|******|******|******|
     Order #: 257468P     Type: PENDING                          |        |******|******|******|******|******|******|******|
      Status: pending                                            |        |******|******|******|******|******|******|******|
BCMA MEDICATION LOG HISTORY                                      |        |******|******|******|******|******|******|******|
 No Medication Log entries are on file for this order.
CAUTION!  THIS IS A PENDING ORDER :: CHECK WITH PROVIDER OR PHARMACIST!
-------------------------------------------------------------------------------------------------------------------------------

                                                                  Admin
Start                     Stop                                    Times    01/28  01/29  01/30  01/31  02/01  02/02  02/03
-------------------------------------------------------------------------------------------------------------------------------
Jul 17, 2012@10:40        Jul 17, 2012@15:00                     | 1200   |******|******|******|******|******|******|******|
<<ACYCLOVIR INJ>>                                                | 1500   |******|******|******|******|******|******|******|
 Additive(s): <<ACYCLOVIR BOTTLE: A 1MG>>
 Solution(s): <<DEXTROSE 10% INJ  1000ML>>
        Give:  IV PIGGYBACK BID S INFUSE OVER 10 Minutes
    Provider: BCMAPROVIDER, ONE
RPh/Entry by: BCMAPHARMACIST, ONE
     Order #: 1V          Type: IV
      Status: expired
BCMA MEDICATION LOG HISTORY
 No Medication Log entries are on file for this order.
Special Instructions:
TEST
-------------------------------------------------------------------------------------------------------------------------------
|            SIGNATURE/TITLE            | INIT  | INJECTION SITES (Right or Left)       VA FORM  10-2970
|_______________________________________|_______| 1. DELTOID           4. MED (ANTERIOR) THIGH  7. ABDOMEN
|_______________________________________|_______| 2. VENTRAL GLUTEAL   5. VASTUS LATERALIS      8. THIGH
|_______________________________________|_______| 3. GLUTEUS MEDIUS    6. UPPER ARM             9. BUTTOCK
|_______________________________________|_______|10. UPPER BACK      PRN: E=Effective  N=Not Effective
```

Contingency PC Workstation Reports

Print MAR for Selected Ward

```
Select BCMA Backup System (Wrkstn) <TEST ACCOUNT> Option: PW  Print MAR for Selected Ward
Inpatient Pharmacy Orders for a selected ward
Select WARD: C MED   C MEDICINE

Report [A]LL or [C]URRENT orders? CURRENT// <ENTER>

Include Patients Without Active Medications? YES// <ENTER>

Sort Patients by [N]ame or [R]oom/Bed? Room/bed// Name <ENTER>

Print how many days MAR? 7// <ENTER>

Select how many BCMA Medication Log history: 1// <ENTER>

DEVICE: HOME// DEC Windows <ENTER>


MAR Ran: Jan 28, 2013@09:10:52   Inpatient Pharmacy Orders (Backup)                                                    Page:   1
PATIENT1,TEST                      SSN: 000000001   DOB: Sep 17, 1950   Sex: M
Ward: C MEDICINE                 Room: 320          Bed: 1
            This record last updated: Mar 02, 2012@10:08:57
No allergies reported to the Contingency

No Active Medication Orders were reported to the Contingency at the time the MAR was printed


|            SIGNATURE/TITLE            | INIT  | INJECTION SITES (Right or Left)       VA FORM  10-2970
|_______________________________________ |_______| 1. DELTOID           4. MED (ANTERIOR) THIGH  7. ABDOMEN
|_______________________________________ |_______| 2. VENTRAL GLUTEAL   5. VASTUS LATERALIS      8. THIGH
|_______________________________________ |_______| 3. GLUTEUS MEDIUS    6. UPPER ARM             9. BUTTOCK
|_______________________________________ |_______|10. UPPER BACK      PRN: E=Effective  N=Not Effective



MAR Ran: Jan 28, 2013@09:10:52   Inpatient Pharmacy Orders (Backup)                                                    Page:   1
PATIENT2,TEST                      SSN: 000000002   DOB: Jan 01, 1920   Sex: M
Ward: C MEDICINE                 Room: 320          Bed: 2
            This record last updated: Jan 22, 2013@15:35:08
No allergies reported to the Contingency
                                                                 Admin
Start                     Stop                                   Times    01/28  01/29  01/30  01/31  02/01  02/02  02/03
-------------------------------------------------------------------------------------------------------------------------
Jan 22, 2013@15:34        Feb 21, 2013@18:00                    | 0900   |______|______|______|______|______|______|______|
<<ASPIRIN 325MG BUFFERED TAB>>
       Give: 325MG ORAL (BY MOUTH) QD-(EVERY DAY)%0900
    Provider: BCMAPROVIDER, ONE
RPh/Entry by: BCMAPHARMACIST, ONE
     Order #: 3U          Type: UNIT DOSE
      Status: finished/verified by pharmacist(active)
BCMA MEDICATION LOG HISTORY
 No Medication Log entries are on file for this order.
-------------------------------------------------------------------------------------------------------------------------
|            SIGNATURE/TITLE            | INIT  | INJECTION SITES (Right or Left)       VA FORM  10-2970
|_______________________________________ |_______| 1. DELTOID           4. MED (ANTERIOR) THIGH  7. ABDOMEN
|_______________________________________ |_______| 2. VENTRAL GLUTEAL   5. VASTUS LATERALIS      8. THIGH
|_______________________________________ |_______| 3. GLUTEUS MEDIUS    6. UPPER ARM             9. BUTTOCK
|_______________________________________ |_______|10. UPPER BACK      PRN: E=Effective  N=Not Effective



MAR Ran: Jan 28, 2013@09:10:52   Inpatient Pharmacy Orders (Backup)                                                    Page:   1
PATIENT3,TEST                      SSN: 000000003   DOB: Jan 01, 1930   Sex: F
Ward: C MEDICINE                 Room: 321          Bed: 1
            This record last updated: Jan 18, 2013@11:54:28
No allergies reported to the Contingency
                                                                 Admin
Start                     Stop                                   Times    01/28  01/29  01/30  01/31  02/01  02/02  02/03
-------------------------------------------------------------------------------------------------------------------------
Jan 18, 2013@11:51        Feb 17, 2013@18:00                    | 0600   |______|______|______|______|______|______|______|
<<ALLOPURINOL 50MG (1/2 X 100MG) TAB>>                          | 1200   |______|______|______|______|______|______|______|
       Give: 150mg ORAL (BY MOUTH) Q6H                          | 1800   |______|______|______|______|______|______|______|
    Provider: BCMAPROVIDER, ONE                                 | 2400   |______|______|______|______|______|______|______|
RPh/Entry by: BCMAPHARMACIST, ONE
     Order #: 17U         Type: UNIT DOSE
      Status: finished/verified by pharmacist(active)
BCMA MEDICATION LOG HISTORY
 No Medication Log entries are on file for this order.
-------------------------------------------------------------------------------------------------------------------------
|            SIGNATURE/TITLE            | INIT  | INJECTION SITES (Right or Left)       VA FORM  10-2970
|_______________________________________ |_______| 1. DELTOID           4. MED (ANTERIOR) THIGH  7. ABDOMEN
|_______________________________________ |_______| 2. VENTRAL GLUTEAL   5. VASTUS LATERALIS      8. THIGH
|_______________________________________ |_______| 3. GLUTEUS MEDIUS    6. UPPER ARM             9. BUTTOCK
```

```
|_____________________________________ |_______|10. UPPER BACK      PRN: E=Effective  N=Not Effective



MAR Ran: Jan 28, 2013@09:10:52   Inpatient Pharmacy Orders (Backup)                                                    Page:   1
PATIENT4,TEST                      SSN: 000000004   DOB: Apr 23, 1966   Sex: M
Ward: C MEDICINE                Room: 321          Bed: 2
            This record last updated: Oct 23, 2012@13:34:56
Allergies: HALOTHANE; MALT BARLEY; PALMOLIVE SOAP; WATERMELONS; KELP; OLEPTRO; SARDINES;
           MALTOSE; NICOTINAMIDE HYDRIODIDE/P; POLLEN; NAMENDA TITRATION PAK;
           PINE NEEDLES; PINE PRODUCTS; IBUPROFEN/PSEUDOEPHEDRINE; TALBUTAL;
           FARBITAL(NEW FORMULA); CARBONATED BEVERAGES; METHYLCELLULOSE;
           CADEXOMER IODINE; ALUMINUM ACETATE/BENZETHO; HALAZEPAM;
           **ADR** ALUMINUM HYDROXIDE/ASPIRI

No Active Medication Orders were reported to the Contingency at the time the MAR was printed



|            SIGNATURE/TITLE            | INIT  | INJECTION SITES (Right or Left)       VA FORM  10-2970
|_______________________________________ |_______| 1. DELTOID           4. MED (ANTERIOR) THIGH  7. ABDOMEN
|_______________________________________ |_______| 2. VENTRAL GLUTEAL   5. VASTUS LATERALIS      8. THIGH
|_______________________________________ |_______| 3. GLUTEUS MEDIUS    6. UPPER ARM             9. BUTTOCK
|_______________________________________ |_______|10. UPPER BACK      PRN: E=Effective  N=Not Effective
```

Print Blank MAR for Selected Patient

Blank 3 Day MAR for Selected Patient

```
Select BCMA Backup System (Wrkstn) Option: BL <ENTER> Print Blank Mar for Selected Patient

Inpatient Pharmacy Orders for a selected patient
Select PATIENT NAME: BCMAPATIENT1,ONE  <ENTER>

Print how many days MAR? 7// 3 <ENTER>

DEVICE: BCBU// <ENTER>

MAR Ran: Mar 29, 2005@07:49:18   Inpatient Pharmacy Orders (Backup)                                  Page:   1
BCMAPATIENT1,ONE                  SSN: 000000001   DOB: Jul 29, 1915   Sex: M
Ward: 4 MED                      Room: M20         Bed: A
             This record last updated: Mar 29, 2005@07:29:43
Allergies: DYE,CATHETER; DILTIAZEM; SULFA; IBUPROFEN
                                                             Admin        MAR
  Order      Start                 Stop                      Times         29    30    31      Notes
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____________|______________________|___________________     |           |_____|_____|_____|
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     RPH Verify:___________    Nurse Verify:____________
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|             SIGNATURE/TITLE            | INIT  |           INJECTION SITES            |    MED/DOSE OMITTED       |    REASON  |
|--------------------------------------- |-------|------------------------------------  |---------------------------|------------|
|--------------------------------------- |-------|   Indicate RIGHT (R) or LEFT (L)     |---------------------------|------------|
|--------------------------------------- |-------|                                      |-------------------------  |------------|
|--------------------------------------- |-------|    (IM)                  (SUB Q)     |---------------------------|------------|
|--------------------------------------- |-------|1. DELTOID              6. UPPER ARM  |---------------------------|------------|
|--------------------------------------- |-------|2. VENTRAL GLUTEAL      7. ABDOMEN    |---------------------------|------------|
|--------------------------------------- |-------|3. GLUTEUS MEDIUS       8. THIGH      |---------------------------|------------|
|--------------------------------------- |-------|4. MED (ANTERIOR) THIGH 9. BUTTOCK    |---------------------------|------------|
|--------------------------------------- |-------|5. VASTUS LATERALIS     10. UPPER BACK|---------------------------|------------|
|--------------------------------------- |-------|  PRN: E=Effective  N=Not Effective   |---------------------------|------------|
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```

Blank 7 Day MAR for Selected Patient

```
Select BCMA Backup System (Wrkstn) Option: BL  <ENTER> Print Blank Mar for Selected Patient

Inpatient Pharmacy Orders for a selected patient
Select PATIENT NAME:    BCMAPATIENT1,ONE <ENTER>

Print how many days MAR? 7// <ENTER>

DEVICE: BCBU// <ENTER>

MAR Ran: Mar 29, 2005@07:50:10   Inpatient Pharmacy Orders (Backup)                                           Page:   1
BCMAPATIENT1,ONE                  SSN: 000000001   DOB: Jul 29, 1915   Sex: M
Ward: 4 MED                      Room: M20         Bed: A
             This record last updated: Mar 29, 2005@07:29:43
Allergies: DYE,CATHETER; DILTIAZEM; SULFA; IBUPROFEN
                                                             Admin        MAR                APR
  Order      Start                 Stop                      Times        29    30    31    1     2     3     4        Notes
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     RPH Verify:___________    Nurse Verify:____________
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|            SIGNATURE/TITLE             | INIT  |           INJECTION SITES            |    MED/DOSE OMITTED       |    REASON  |
|--------------------------------------- |-------|------------------------------------  |---------------------------|------------|
|--------------------------------------- |-------|   Indicate RIGHT (R) or LEFT (L)     |---------------------------|------------|
|--------------------------------------- |-------|                                      |-------------------------  |------------|
|--------------------------------------- |-------|    (IM)                  (SUB Q)     |---------------------------|------------|
|--------------------------------------- |-------|1. DELTOID              6. UPPER ARM  |---------------------------|------------|
|--------------------------------------- |-------|2. VENTRAL GLUTEAL      7. ABDOMEN    |---------------------------|------------|
|--------------------------------------- |-------|3. GLUTEUS MEDIUS       8. THIGH      |---------------------------|------------|
|--------------------------------------- |-------|4. MED (ANTERIOR) THIGH 9. BUTTOCK    |---------------------------|------------|
|--------------------------------------- |-------|5. VASTUS LATERALIS     10. UPPER BACK|---------------------------|------------|
|--------------------------------------- |-------|  PRN: E=Effective  N=Not Effective   |---------------------------|------------|
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Contingency PC Workstation Reports

List of Wards in BCMA Backup File

```
Select BCMA Backup System (Wrkstn) Option: WL <ENTER>  List of Wards in BCMA Backup File
Wards with BCMA Backup Data on this workstation:

     10W
     2B APCU
     3E GEM
     3E SUBACUTE
     3W GS
     3W ORTHO
     4 MED
     4 SURG
     4E ENT
     4E M
     4E ON
     MICU
     TICU
```

Trouble Shooting Guide

The messages are building on the VistA side, but I see an open fail in the link monitor.

Check the following areas:

- The IP address on both and make sure they match.
- The Port numbers on both and make sure they match.
- The Firewall on the workstation.
- The Filers on the workstation.
- The Link Manager on the workstation.

When logging into the Cache Terminal on the workstation I get a <FILEFULL> error. When looking at the HL7 System Link Monitor on VistA the BCBU Workstation shows a READ ERROR state.

This may be caused by the BCBU workstation reaching its defined maximum allowed database size. To increase the size of the BCBU workstations database go into the Cache Cube / Control Panel / Local Databases. Right click on VISTA and select properties. If the database has reached the maximum defined the fields # of MB and Max # of MB will be equal. To increase the size edit only the Max # of MB field. (**Note:** Make sure the physical hard drive has enough space available for the increase in the database size)

When logging into the Cache Terminal on the workstation I get a <NOROUTINE> error.

Verify that the two user accounts setup under the Cache Cube / Control Panel / Security / User Accounts are set to VISTA Namespace and ^ZU Routine.

The messages appear to be transmitting but no data is filing on the workstation.

Verify that the HL COMMUNICATION SERVER PARAMETERS field, "DEFAULT PROCESSING ID" is set correctly. This field must match the value of the sending VistA system. In addition, verify that INCOMING and OUTGOING HL7 filers are running on the workstation.

I don't see the message queue increase for my HL7 link when I run the 'Initialize Workstation" option or during activity on the VistA side?

The following two places need to be checked:

Make sure the Link is enabled on the VistA side. *HL7 Main Menu* [HL MAIN MENU] option. Make sure the Workstation Link is associated to the correct division or Default parameter. [PSB BCBU LINK ASSOCIATIONS] option.

Trouble Shooting Guide

I'm able to start TaskMan up with the Taskman_start script, but I notice that the HL7 link jobs do not start. What could be the problem?

Linux requires root privs to start listener jobs on TCPIP ports. TaskMan needs to be started by the root user so its submanagers (which start the listener) can have those privs as well. To do this, login as the BCMA Manager the issue the command "su –m" and enter the root password. Once you're logged in as root, start TaskMan by issuing the command "./taskman_start". The HL7 link manager and the listener link should start automatically. **Note:** Netmail startup has root requirements as well.

Running the netmail_start script does not start netmail. What could be the problem?

Linux requires root privs to start listener jobs on TCPIP ports. To start up the network mail listener job, log in as the BCMA Manager, then issue the command "su –m" and enter the root password. Once you're logged in as root, start network mail by issuing the command "./netmail_start". **Note:** HL7 links have root requirements as well.

How can I verify the TCPIP listening jobs on Linux?

As root, issue the "netstat –tlp" command. This will provide information similar to the following:

```
Proto Recv-Q Send-Q Local Address           Foreign Address         State       PID/Program name
tcp        0      0 *:32768                 *:*                     LISTEN      523/rpc.statd
tcp        0      0 BCMA.med.va.gov:32769 *:*                       LISTEN      628/xinetd
tcp        0      0 *:printer               *:*                     LISTEN      658/lpd Waiting
tcp        0      0 *:sunrpc                *:*                     LISTEN      504/portmap
tcp        0      0 *:10000                 *:*                     LISTEN      1174/mumps
tcp        0      0 *:5904                  *:*                     LISTEN      13884/Xvnc
tcp        0      0 *:x11                   *:*                     LISTEN      813/X
tcp        0      0 *:ftp                   *:*                     LISTEN      628/xinetd
tcp        0      0 *:ssh                   *:*                     LISTEN      614/sshd
tcp        0      0 *:telnet                *:*                     LISTEN      628/xinetd
tcp        0      0 *:smtp                  *:*                     LISTEN      1390/mumps
```

Ports of primary interest are 10000 (HL7 listener link) and SMTP (port 25-netmail).

To see the numeric ports for common TCPIP protocols, issue the "netstat –tlp – numeric" command.

What is the best way to shut GT.M down?

$HOME of the BCMA manager account contains the script zgstop. This script is customized to shut down the BCMA configuration cleanly and run the GT.M database down (to ensure database integrity). To use this script properly, it must be run as root (the BCMA manager will not be able to shutdown HL7 link, netmail, and TaskMan jobs started as root - this will prevent the database to rundown properly). To do this, login as the BCMA manager then issue the command "su -m" and enter the root password. Once you're logged in as root, issue the command './zgstop'.

How do I start GT.M up?

There is no single GT.M daemon. This means that each GT.M process 'starts' GT.M for itself. GT.M processes (TaskMan, netmail, HL7 jobs) should start automatically with a system reboot provided the /etc/init.d/gtm script was enabled when BCMA was installed using the install_bcma script.

From within GT.M, how can I view system status (like when I D ^%SS in Cache)?

GT.M does not provide a utility of its own to provide this functionality. However, SD&D have provided the ^ZSY routine to accomplish this. As with other BCMA tasks, it is best to run this as the root user; otherwise, not all process information will be accessible. To do this, login as the BCMA manager, then issue the command "su -m" and enter the root password. Drop into GT.M, issue the ZSY command as follows, and select the type of display desired.

```
GTM>D ^ZSY
1 pid
2 cpu time
3 image/pid
4 image/cpu
1// 1
INTRPT issued to process 1409
INTRPT issued to process 1148
INTRPT issued to process 1390
INTRPT issued to process 1315
INTRPT issued to process 1307
INTRPT issued to process 1295
INTRPT issued to process 1291
INTRPT issued to process 1239
INTRPT issued to process 1229
INTRPT issued to process 1225
INTRPT issued to process 1222
INTRPT issued to process 1216
INTRPT issued to process 1213
INTRPT issued to process 1189
INTRPT issued to process 1179
INTRPT issued to process 1177
INTRPT issued to process 1174
INTRPT issued to process 1157
INTRPT issued to process 1145
```

System Status for GT/M

```
GT.M Mumps users on 18-Mar-03 11:11:10

Proc. id Proc. name      PS  Terminal Routine            Mode   CPU time
-------- --------------- --- -------- --------           ------
1145     TaskMan VISTA 1 S   ?        IDLE+1^%ZTM        -direct
1148                     S   pts/2                       -direct
1157     HLmgr:538       S   ?        LOOP+3^HLCSLM      -direct
1174     HLSrv:182       S   ?                           -direct
1177                     S   ?        SUB+1^%ZTMS1       -direct
1179     BTask 546       S   ?        STARTIN+17^HLCSIN  -direct
1189     BTask 545       S   ?        STARTIN+17^HLCSIN  -direct
1213     BTask 547       S   ?        STARTOUT+16^HLCSOUT-direct
1216     BTask 548       S   ?        STARTOUT+16^HLCSOUT-direct
1222     BTask 550       S   ?        STARTIN+17^HLCSIN  -direct
1225     BTask 551       S   ?        STARTIN+17^HLCSIN  -direct
1229     BTask 552       S   ?        STARTOUT+16^HLCSOUT-direct
1239     BTask 553       S   ?        STARTOUT+16^HLCSOUT-direct
1291     Sub 1291        S   ?        GETTASK+3^%ZTMS1   -direct
1295     Sub 1295        S   ?        SUB+1^%ZTMS1       -direct
1307     Sub 1307        S   ?        GETTASK+3^%ZTMS1   -direct
1315     Sub 1315        S   ?        SUB+1^%ZTMS1       -direct
1390                     S   ?                           -direct
1409                     S   pts/3    jobset+4^ZSY       -direct
```

I'm getting <RECOMPILE> errors when working on the Caché system.

If you are getting this error, the routines need to be recompiled on the workstation. There are two different methods you can use to accomplish this:

CHUI

1. Get to the programmer prompt on the workstation.
2. D ^%RCOMPIL
3. At the routine selection prompt, select %*, press **Enter**.
4. Repeat the D ^%RCOMPIL command and select * at the routine selection prompt.

GUI

1. Right-click on the Cache cube and select Explorer.
2. On the left side of the screen expand VistA under the Local Databases, select routines.
3. In the routine selection box, enter %*
4. From the Edit menu, click on Select All.
5. In the Contents screen on the right, right-click, then click Advanced/Compile.
6. Repeat steps 3-5, selecting * in the routine selection.