



# **CAPACITY MANAGEMENT TOOLS TECHNICAL MANUAL**

Version 2.0

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Department of Veterans Affairs  
VistA Health Systems Design & Development (HSD&D)  
Development and Infrastructure Support (DaIS)



# Revision History

## Documentation Revisions

The following table displays the revision history for this document. Revisions to the documentation are based on patches and new versions released to the field.

<b>Date</b>	<b>Revision</b>	<b>Description</b>	<b>Author</b>
03/24/04	1.0	Initial Capacity Management Tools V. 2.0 software documentation creation.	Robert Kamarowski, Bay Pines, FL OIFO and Thom Blom, Oakland, CA OIFO
04/15/04		Corrected references to CPRS and OE/RR software versions with regard to Patch OR*3.0*209 in Table 9-1 in Chapter 9, "External Relations" and "Relationship of CM Tools Software with VistA" topic in Chapter 10, "Internal Relations."	Robert Kamarowski, Bay Pines, FL OIFO and Thom Blom, Oakland, CA OIFO

**Table i: Documentation revision history**

## Patch Revisions

There are no patches for this initial release of the Capacity Management Tools Version 2.0 software. In the future, for a complete list of patches related to this software, please refer to the Patch Module on FORUM.

## Revision History

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- DaIS Program Director—Catherine Pfeil
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- Technical Writer—Thom Blom

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# Orientation

## How to Use this Manual

Throughout this manual, advice and instructions are offered regarding the use of Capacity Management Tools software and the functionality it provides for Veterans Health Information Systems and Technology Architecture (VistA) software products.

This manual uses several methods to highlight different aspects of the material:

- Various symbols are used throughout the documentation to alert the reader to special information. The following table gives a description of each of these symbols:

Symbol	Description
	Used to inform the reader of general information including references to additional reading material.
	Used to caution the reader to take special notice of critical information.

**Table ii: Documentation symbol descriptions**

- Descriptive text is presented in a proportional font (as represented by this font).
- HL7 messages, "snapshots" of computer online displays (i.e., roll-and-scroll screen captures/dialogues) and computer source code, if any, are shown in a *non*-proportional font and enclosed within a box.
  - User's responses to online prompts will be boldface type. The following example is a screen capture of computer dialogue, and indicates that the user should enter two question marks:

```
Select Primary Menu option: ??
```

- The "<Enter>" found within these snapshots indicate that the user should press the Enter key on their keyboard. Other special keys are represented within < > angle brackets. For example, pressing the PF1 key can be represented as pressing <PF1>.
- Author's comments, if any, are displayed in italics or as "callout" boxes.



Callout boxes refer to labels or descriptions usually enclosed within a box, which point to specific areas of a displayed image.

- All uppercase is reserved for the representation of M code, variable names, or the formal name of options, field and file names, and security keys (e.g., the XUPROGMODE key).

## How to Obtain Technical Information Online

Exported file, routine, and global documentation can be generated through the use of Kernel, MailMan, and VA FileMan utilities.

-  Methods of obtaining specific technical information online will be indicated where applicable under the appropriate topic. Please refer to the *Capacity Management Tools Technical Manual* for further information.

### Help at Prompts

VistA software provides online help and commonly used system default prompts. Users are encouraged to enter question marks at any response prompt. At the end of the help display, you are immediately returned to the point from which you started. This is an easy way to learn about any aspect of VistA software.

To retrieve online documentation in the form of Help in any VistA character-based product:

- Enter a single question mark ("?") at a field/prompt to obtain a brief description. If a field is a pointer, entering one question mark ("?") displays the HELP PROMPT field contents and a list of choices, if the list is short. If the list is long, the user will be asked if the entire list should be displayed. A **YES** response will invoke the display. The display can be given a starting point by prefacing the starting point with an up-arrow ("^") as a response. For example, **^M** would start an alphabetic listing at the letter M instead of the letter A while **^127** would start any listing at the 127th entry.
- Enter two question marks ("??") at a field/prompt for a more detailed description. Also, if a field is a pointer, entering two question marks displays the HELP PROMPT field contents and the list of choices.
- Enter three question marks ("???) at a field/prompt to invoke any additional Help text stored in Help Frames.

### Obtaining Data Dictionary Listings

Technical information about files and the fields in files is stored in data dictionaries. You can use the List File Attributes option on the Data Dictionary Utilities submenu in VA FileMan to print formatted data dictionaries.

-  For details about obtaining data dictionaries and about the formats available, please refer to the "List File Attributes" chapter in the "File Management" section of the *VA FileMan Advanced User Manual*.

## Assumptions About the Reader

This manual is written with the assumption that the reader is familiar with the following:

- VistA computing environment
- VA FileMan data structures and terminology
- Microsoft Windows
- M programming language

It provides an overall explanation of configuring the Capacity Management Tools interface and the changes contained in Capacity Management Tools Version 2.0. However, no attempt is made to explain how the overall VistA programming system is integrated and maintained. Such methods and procedures are documented elsewhere. We suggest you look at the various VA home pages on the World Wide Web (WWW) for a general orientation to VistA. For example, go to the Veterans Health Administration (VHA) Office of Information (OI) Health Systems Design & Development (HSD&D) Home Page at the following Web address:

<http://vista.med.va.gov/>

## Reference Materials

Readers who wish to learn more about the Capacity Management Tools software should consult the following:

- *Capacity Management Tools Installation Guide*
- *Capacity Management Tools User Manual*
- Capacity Planning (CP) Services' Home Page at the following Web address:

<http://vista.med.va.gov/capman/default.htm>

This site contains additional information and documentation.

VistA documentation is made available online in Microsoft Word format and Adobe Acrobat Portable Document Format (PDF). The PDF documents *must* be read using the Adobe Acrobat Reader (i.e., ACROREAD.EXE), which is freely distributed by Adobe Systems Incorporated at the following Web address:

<http://www.adobe.com/>

VistA documentation can be downloaded from the Enterprise VistA Support (EVS) anonymous directories or from the Health Systems Design and Development (HSD&D) VistA Documentation Library (VDL) Web site:

<http://www.va.gov/vdl/>



For more information on the use of the Adobe Acrobat Reader, please refer to the *Adobe Acrobat Quick Guide* at the following Web address:

<http://vista.med.va.gov/iss/acrobat/index.asp>



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# Chapter 1: Introduction

This distribution contains Capacity Management Tools software, version 2.0. This version of the software can be installed over any previous test versions of CM Tools without any adverse problems. The current software version is compatible with all current operating system platforms at VA sites.

The Capacity Management Tools software is a fully automated support tool developed by Capacity Planning (CP) Services. It entails the capture of all Veterans Health Information Systems and Technology Architecture (VistA) Health Level Seven (HL7) workload specifics from participating sites. This HL7 workload data is then summarized on a weekly basis and is automatically transferred via network mail (i.e., MailMan) to the Capacity Planning National Database.

The Veterans Health Administration (VHA) developed the Capacity Management Tools software in order to obtain more accurate information regarding the current and future VistA HL7 workload data at VA sites.

Installing the CM Tools software creates the collection process mechanism and other necessary components of the software. The fully automated data collection mechanism entails capturing all VistA HL7 workload specifics at the site into the ^TMP("KMPDH",\$J) temporary collection global. The collection mechanism is continuously monitoring each process on the system while trapping VistA HL7 workload data.

On a nightly basis, the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] moves the data within the ^TMP("KMPDH",\$J) temporary collection global to the CM HL7 DATA file (#8973.1). Upon completion, the temporary data within the ^TMP("KMPDH",\$J) temporary collection global is purged.

The CM Tools Background Driver option [KMPD BACKGROUND DRIVER] monitors and trims (records deleted) the following files to ensure that the correct maximum number of day's data is maintained as determined by the appropriate CP parameters:

- CM HL7 DATA file (#8973.1)—The maximum amount of data collected is determined by the Purge HL7 Data After CP parameter.
- CP TIMING file (#8973.2)—The maximum amount of data collected is determined by the Purge Timing Data After CP parameter.



For more information on the CP parameters, please refer to the "Edit CP Parameters File" topic in Chapter 3, "CM Tools: Options," in the *Capacity Management Tools User Manual*.

On a nightly basis, the CM Tools Background Driver option automatically compresses the information contained within the CP TIMING file (#8973.2) into daily statistics. These daily statistics are converted into an electronic mail message that is automatically transferred via network mail (i.e., VistA MailMan) and merged into a Capacity Planning National Database where this data is used for evaluation purposes.

Also, each Sunday night, the CM Tools Background Driver option automatically compresses the information contained within both the CM HL7 DATA (#8973.1) and CP TIMING (#8973.2) files into weekly statistics. These weekly statistics are converted into an electronic mail message that is automatically transferred via network mail (i.e., VistA MailMan) and merged into a Capacity Planning National Database where this data is used for evaluation purposes.

The data is also available on Capacity Planning (CP) Services' Web site at the following Web addresses:

- Statistics—Provides statistics for each listed site:  
<http://vista.med.va.gov/capman/Statistics/Default.htm>
- Projections—Provides data trends for each listed site:  
<http://vista.med.va.gov/capman/TrendSetter/Default.htm>

IRM staff utilizes the options that are available at the site to manage this software. IRM staff responsible for capacity planning tasks at the site can use these options to review system workload trends. Additionally, the IRM staff can review specific VistA HL7 workload data.

## Chapter 2: Implementation and Maintenance

After the initial setup procedures are performed as detailed in the *Capacity Management Tools Installation Guide*, the software basically operates transparent to IRM with minimal impact on system resources. The software uses the Kernel-supplied TaskMan utility to schedule a background task and it is then rescheduled to run on a regular nightly basis. The nightly time frame for data file upload was chosen in order to minimize network impact.

 For more information on initial setup procedures, please refer to the "Preliminary Consideration" topic in the *Capacity Management Tools Installation Guide*.

 For more information on CM Tools and CM Tool-related options, please refer to Chapter 3, "CM Tools: Options," in the *Capacity Management Tools User Manual*.

### Implementation

#### Namespace

Capacity Planning (CP) Services has been given the KMP\* namespace for both routines and global(s). The Capacity Management Tools Software utilizes the KMPD namespace for its routines and global. Therefore, you should review your translation table setting(s) to determine the proper placement for the KMP\* global namespace.

#### ^KMPD Global

The Capacity Management Tools V. 2.0 software installation creates the ^KMPD global to store the following:

- CP CODE EVALUATOR file (#8972.1)—This file is for future use.
- CP PARAMETERS file (#8973)—This is a static file.
- CM HL7 DATA file (#8973.1)—This file's records are trimmed nightly.
- CP TIMING file (#8973.2)—This file's records are trimmed nightly.

The CM HL7 DATA (#8973.1) and CP TIMING (#8973.2) files in the ^KMPD global are trimmed (records deleted) by the nightly CM Tools Background Driver option [KMPD BACKGROUND DRIVER] to contain a maximum number of day's data as determined by the appropriate CP parameters in the CP PARAMETERS file (#8973).

 For more information on the CP parameters, please refer to the "Edit CP Parameters File" topic in Chapter 3, "CM Tools: Options," in the *Capacity Management Tools User Manual*.

## Check CM Tools Background Driver Option

The IRM staff should use the Check CM Tools Environment option [KMPD STATUS] to ensure that the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] is scheduled to run every day at 1:30 a.m.

If the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] is not shown as being scheduled to run in the future, the IRM staff should use TaskMan's Schedule/Unschedule Options option [XUTM SCHEDULE], located under the Taskman Management menu [XUTM MGR], to schedule the KMPD BACKGROUND DRIVER option to run every day at 1:30 a.m.



**Capacity Planning Services *strongly* recommends that the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] be scheduled to run every day at 1:30 a.m., because this background driver is the main mechanism by which the following sub-globals are purged nightly:**

- **^KMPD(8973.1)—CM HL7 DATA file (#8973.1):** Records are purged as prescribed by the Purge HL7 Data After CP parameter, which is stored in the HL7 WEEKS TO KEEP DATA field (#3.11) in the CP PARAMETERS file (#8973). This parameter is edited via the Edit CP Parameters File option [KMPD PARAM EDIT].
- **^KMPD(8973.2)—CP TIMING file (#8973.2):** Records are purged as prescribed by the Purge Timing Data After CP parameter, which is stored in the TIMING WEEKS TO KEEP DATA field (#4.11) in the CP PARAMETERS file (#8973). This parameter is edited via the Edit CP Parameters File option [KMPD PARAM EDIT].

**Modification of the frequency and time may have adverse effects on the size of the temporary ^KMPD(8973.1) and ^KMPD(8973.2) sub-globals and on the number of entries within the CM HL7 DATA file (#8973.1) and CP TIMING (#8973.2) files.**



For more information on the Background Driver option, please refer to the "CM Tools Background Driver" topic in Chapter 6, "Exported Options," in this manual.

## Maintenance

Information throughout this manual is meant to help IRM in the maintenance of the software. The discussion that follows covers the options available to assist IRM in that maintenance.

### CP Tools Manager Menu

All options for the CP Tools Manager Menu [KMPD CM TOOLS MANAGER MENU] can be found under the Capacity Planning menu [XTCM MAIN]. The XTCM MAIN menu is found under the Eve menu and should be assigned to IRM staff member(s) who support(s) this software and other capacity planning tasks.



For more information on the CP Tools Manger Menu, please refer to the "CP Tools Manager Menu" topic in Chapter 6 in this manual or the "CM Tools: Options" chapter in the *Capacity Management Tools User Manual*.

### CM Tools Background Driver Option

The IRM staff should first invoke the Check CM Tools Environment option [KMPD STATUS], which is located under the CP Tools Manager Menu [KMPD CM TOOLS MANAGER MENU], to ensure that the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] is scheduled to run every day at 1:30 a.m.

If the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] is not shown as being scheduled to run in the future, the Check CM Tools Environment option [KMPD STATUS] will prompt to queue the task every night at 1:30 a.m. Alternately, you can also use TaskMan's Schedule/Unschedule Options option [XUTM SCHEDULE], located under the Taskman Management menu [XUTM MGR], to schedule the KMPD BACKGROUND DRIVER option to run every day at 1:30 a.m.



**Capacity Planning Services *strongly* recommends that the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] be scheduled to run every day at 1:30 a.m., because this background driver is the main mechanism by which the following sub-globals are purged nightly:**

- **^KMPD(8973.1)—CM HL7 DATA file (#8973.1):** Records are purged as prescribed by the Purge HL7 Data After CP parameter, which is stored in the HL7 WEEKS TO KEEP DATA field (#3.11) in the CP PARAMETERS file (#8973). This parameter is edited via the Edit CP Parameters File option [KMPD PARAM EDIT].
- **^KMPD(8973.2)—CP TIMING file (#8973.2):** Records are purged as prescribed by the Purge Timing Data After CP parameter, which is stored in the TIMING WEEKS TO KEEP DATA field (#4.11) in the CP PARAMETERS file (#8973). This parameter is edited via the Edit CP Parameters File option [KMPD PARAM EDIT].

**Modification of the frequency and time may have adverse effects on the size of the temporary ^KMPD(8973.1) and ^KMPD(8973.2) sub-globals and on the number of entries within the CM HL7 DATA file (#8973.1) and CP TIMING (#8973.2) files.**



For more information on the CM Tools Background Driver option [KMPD BACKGROUND DRIVER], please refer to the "CM Tools Background Driver" topic in Chapter 6 in this manual or the "CM Tools: Options" chapter in the *Capacity Management Tools User Manual*.

# Chapter 3: Files

The Capacity Management Tools software consists of two globals with two files: the CM HL7 DATA (#8973.1) and the CP TIMING (#8973.2) files.

This chapter describes the CM Tools-related files including the file number, file name, global location, and description of the files.



For more information on the CM Tools globals, please refer to Chapter 4, "Global Translation, Journaling, and Protection," in this manual.

## Files

File Number	File Name	Global	File Description
8972.1	CP CODE EVALUATOR	^KMPD(8972.1	This file was added for the future implementation of the Code Evaluator, which will allow programmers to test the efficiency of M code changes.  No data comes with the file.
8973	CP PARAMETERS	^KMPD(8973	This file was created to contain the parameters and data for the following: <ol style="list-style-type: none"><li>1. Current versions/patches of Capacity Planning applications: Resource Usage Monitor (RUM), Statistical Analysis of Global Growth (SAGG), and Capacity Management (CM) Tools.</li><li>2. Start, stop, and delta times for all daily/weekly background jobs.</li><li>3. The number of weeks to keep data: RUM, HL7, and Timing.</li><li>4. Current facility CPU data:<ul style="list-style-type: none"><li>• Node</li><li>• Type of CPU</li><li>• Number of processors</li><li>• Processor speed</li><li>• Amount of memory</li></ul></li></ol>
8973.1	CM HL7 DATA	^KMPD(8973.1	This file stores VistA HL7 workload information.  No data comes with the file.

File Number	File Name	Global	File Description
8973.2	CP TIMING	^KMPD(8973.2	<p>This file stores the timing statistics that are gathered when the Start/Stop Timing Collection option [KMPD TMG START/STOP] is set to "running." During the day, timing data is saved into the temporary ^KMPTMP("KMPDT") global. Each night a background job compiles this temporary data into daily statistics and stores this data in File #8973.1 (CP Timing). The data in File #8973.1 is purged each night to ensure only 30 days of data exist.</p> <p>No data comes with the file.</p>

**Table 3-1: CM Tools file list**

## Templates

This version of the Capacity Management Tools software does *not* contain any templates.

# Chapter 4: Global Translation, Journaling, and Protection

The following globals are distributed with the Capacity Management Tools software:

Global	Description
^KMPD	<p>The ^KMPD global contains the following files:</p> <ul style="list-style-type: none"> <li>• CP CODE EVALUATOR file (#8972.1)</li> <li>• CP PARAMETERS file (#8973)</li> <li>• CM HL7 DATA file (#8973.1)</li> <li>• CP TIMING file (#8973.2)</li> </ul> <p>Each night this global will be trimmed (records deleted) automatically to contain the correct maximum number of day's data as determined by the appropriate CP parameters. This global is trimmed by the CM Tools Background Driver option [KMPD BACKGROUND DRIVER], which is scheduled to run every day at 1:30 a.m.</p>
^TMP("KMPDH",\$J)	<p>The ^TMP("KMPDH",\$J) temporary collection global contains data that is gathered from the VistA Health Level Seven (HL7) software by the CM Tools Background Driver option [KMPD BACKGROUND DRIVER], which is scheduled to run every day at 1:30 a.m.</p> <p>Data within this global is compiled and moved into the CM HL7 DATA file (#8973.1). Upon completion, the data within the ^TMP("KMPDH",\$J) temporary collection global is purged.</p>
^KMPTMP("KMPDT")	<p>The ^KMPTMP("KMPDT") temporary collection global contains Timing data for the CPRS Coversheet.</p> <p>Data within this global is compiled and moved into the CP TIMING file (#8973.2). Upon completion, the data within the ^KMPTMP("KMPDT") temporary collection global is purged.</p>

**Table 4-1: CM Tools global descriptions**

## Translation

The following table lists the translation requirements/recommendations for the CM Tools globals:

Global	Translation
^KMPD	Mandatory, if the operating system supports this function. It is recommended that all Capacity Planning (CP) globals be translated to the same volume set (i.e., KMP*).
^KMPTMP	Mandatory, if the operating system supports this function. It is recommended that all Capacity Planning (CP) globals be translated to the same volume set (i.e., KMP*).

**Table 4-2: CM Tools global translation requirements/recommendations**

## Journaling

The following table lists the journaling requirements/recommendations for the CM Tools globals:

Global	Journaling
^KMPD	Mandatory, if the operating system supports this function.
^KMPTMP	<i>Not recommended.</i>

**Table 4-3: CM Tools global journaling requirements/recommendations**

## Protection

The following table lists the protection settings for the CM Tools globals:

Global Name	Protection	
	DSM for OpenVMS	Caché
^KMPD	System: RW World: RW Group: RW User: RW	Owner: RW Group: RW World: RW Network: RW
^KMPTMP	System: RW World: RW Group: RW User: RW	Owner: RW Group: RW World: RW Network: RW

**Table 4-4: CM Tools global protection settings**

## Chapter 5: Routines

This chapter contains a list of the routines exported with the Capacity Management Tools software. A brief description of the routines is provided.

Routine Name	Routine Description
KMPDBD01	<p>Uses a Health Level Seven (HL7) API call to transfer HL7 data to the CM HL7 DATA file (#8973.1). This routine is called by the CM Tools Background Driver option [KMPD BACKGROUND DRIVER].</p> <p>Every Sunday night, this routine creates weekly statistics from the data within the CM HL7 DATA file (#8973.1) and uploads this information to the Capacity Planning National Database.</p> <p>This routine monitors and trims (records deleted) the following files to ensure that the correct maximum number of days data is maintained as determined by the CP parameters:</p> <ul style="list-style-type: none"> <li>• CM HL7 DATA file (#8973.1)—The maximum amount of data collected is determined by the Purge HL7 Data After CP parameter.</li> <li>• CP TIMING file (#8973.2)—The maximum amount of data collected is determined by the Purge Timing Data After CP parameter.</li> </ul>
KMPDHU01 KMPDHU02 KMPDHU03	<p>Compile and compress the Health Level Seven (HL7) data into daily and weekly statistics. These routines are called by the KMPDBD01 routine.</p> <ul style="list-style-type: none"> <li>• Daily (every night)—These routines take data from the ^KMPTMP("KMPD" global and compress it into daily statistics and save it into the CM HL7 DATA file (#8973.1).</li> <li>• Weekly (every Sunday night)—These routines upload the weekly HL7 statistical data stored in the CM HL7 DATA file (#8973.1) to the Capacity Planning National Database.</li> </ul>

Routine Name	Routine Description
KMPDPOST	<p>Schedules the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] to run every night at 1:30 a.m.</p> <p>This routine moves data previously stored at ^KMPTMP("KMPD","BACKGROUND") to the CP PARAMETERS file (#8973), and deletes the ^KMPTMP("KMPD","BACKGROUND") entries.</p> <p>It is a post-install routine.</p>
KMPDSS	<p>Displays the current status of the CM Tools Background Driver option [KMPD BACKGROUND DRIVER]. It is called by the Check CM Tools Environment option [KMPD STATUS].</p> <p>This routine also shows information on the following files:</p> <ul style="list-style-type: none"> <li>• CM HL7 DATA file (#8973.1)</li> <li>• CP TIMING file (#8973.2)—Only displays information if the file has data.</li> </ul> <p>If the background task is not listed as being scheduled, this routine prompts users to queue the task to run every night at 1:30 a.m.</p>
KMPDTM	This routine runs the Timing Monitor option [KMPD TMG MONITOR].
KMPDTP1 KMPDTP2 KMPDTP3 KMPDTP4 KMPDTP5 KMPDTP6 KMPDTP7	Report routines.
KMPDTU02 KMPDTU10 KMPDTU11 KMPDU KMPDUT2 KMPDUT4 KMPDUT4A KMPDUT4B KMPDUT4C KMPRUTL KMPDUTL1 KMPDUTL2 KMPDUTL3 KMPDUTL4 KMPDUTL5	Generic utility routines that are called by varying Capacity Management Tools routines.

Table 5-1: CM Tools routine list

## Chapter 6: Exported Options

This chapter lists and briefly describes the options that are exported with or related to the Capacity Management Tools software.



For more detailed information on the Capacity Management Tools-related options, please refer to the "CM Tools: Options" chapter in the *Capacity Management Tools User Manual*.

### Options *With Parents*

The following table lists the options that are exported with or related to the Capacity Management Tools software. Options are listed hierarchically:

Option Name	Option Menu Text	Type
XTCM MAIN	Capacity Planning	Menu  Not exported with CM Tools
KMP MAIL GROUP EDIT	Capacity Planning Mail Group Edit	Action
KMPD CM TOOLS MANAGER MENU	CP Tools Manager Menu	Menu
KMPD STATUS	Check CM Tools Environment option	Run Routine: EN^KMPDSS
KMPD TMG START/STOP	Start/Stop Timing Collection	Run Routine: SST^KMPDSS
KMPD PARAM EDIT	Edit CP Parameters File option	Run Routine: PRM^KMPDSS
KMPD TMG MONITOR	Timing Monitor option	Run Routine: KMPDTM
KMPD CM TOOLS REPORTS	CP Tools Reports	Menu
KMPD TMG REPORTS	Timing Reports	Menu
KMPD TMG AVG TTL	Average Daily Coversheet Load	Run Routine: EN^KMPDTP1
KMPD TMG HRLY TTL	Average Hourly Coversheet Load	Run Routine: EN^KMPDTP3

Option Name	Option Menu Text	Type
KMPD TMG DLY TTL DETAIL	Detailed Daily Coversheet Load	Run Routine: EN^KMPDTP2
KMPD TMG HRLY TTL DETAIL	Detailed Hourly Coversheet Load	Run Routine: EN^KMPDTP4
KMPD TMG TTL ALERT	Threshold Alert	Run Routine: EN^KMPDTP5
KMPD TMG TTL ALERT RT	Real-Time Threshold Alert	Run Routine: EN^KMPDTP6
KMPD TMG HRLY TTL RT	Real-Time Average Hourly Coversheet Load	Run Routine: EN^KMPDTP7

**Table 6-1: CM Tools software-related exported or related options *with* parents**

<b>Capacity Planning</b> (Synonym: CM)	<b>[XTCM MAIN]</b>
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The Capacity Planning menu [XTCM MAIN] is located under the Operations Management menu [XUSITEMGR], which is located under Kernel's Systems Manager Menu [Eve]. This menu holds all the currently available capacity planning options. The XTCM MAIN menu may be assigned to the IRM staff member(s) who support(s) this software and other capacity planning tasks.

The Capacity Planning menu-related options that will be discussed in the CM Tools documentation include the following:

- Capacity Planning Mail Group Edit option
- CP Tools Manager Menu and subordinate options

<b>Capacity Planning Mail Group Edit</b> (Synonym: CPG)	<b>[KMP MAIL GROUP EDIT]</b>
--	------------------------------

The Capacity Planning Mail Group Edit option [KMP MAIL GROUP EDIT] is located under the Capacity Planning menu [XTCM MAIN]. It is used to edit KMP-CAPMAN mail group. It is used to edit the KMP-CAPMAN mail group. The KMP-CAPMAN mail group is defined with the installation of the CM Tools software.

<b>CP Tools Manager Menu</b> (Synonym: TLS)	<b>[KMPD CM TOOLS MANAGER MENU]</b>
--	-------------------------------------

The CP Tools Manager Menu [KMPD CM TOOLS MANAGER MENU] is located under the Capacity Planning menu [XTCM MAIN]. The CP Tools Manager Menu contains the following options:

- Check CM Tools Environment [KMPD STATUS]
- Start/Stop Timing Collection [KMPD TMG START/STOP]
- Edit CP Parameters File [KMPD PARAM EDIT]
- Timing Monitor [KMPD TMG MONITOR]
- CP Tools Reports [KMPD CM TOOLS REPORTS]

<b>Check CM Tools Environment</b> (Synonym: STA)	<b>[KMPD STATUS]</b>
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The Check CM Tools Environment option [KMPD STATUS] is located under the CP Tools Manager Menu [KMPD CM TOOLS MANAGER MENU]. It displays the current status of the Capacity Management Tools software.

This option identifies the number of entries within the following files:

- CM HL7 DATA file (#8973.1)
- CP TIMING file (#8973.2)

Additionally, this option shows the reschedule frequency of the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] task.

If the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] is not shown as being scheduled to run in the future, the Check CM Tools Environment option [KMPD STATUS] prompts the user to queue the task to run every night at 1:30 a.m.

<b>Start/Stop Timing Collection</b> (Synonym: SST)	<b>[KMPD TMG START/STOP]</b>
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The Start/Stop Timing Collection option [KMPD TMG START/STOP] is located under the CP Tools Manager Menu [KMPD CM TOOLS MANAGER MENU]. It is used to initiate or stop the CM Tools collection routines to begin or stop collecting Vista HL7 workload data.

<b>Edit CP Parameters File</b> (Synonym: PRM)	<b>[KMPD PARAM EDIT]</b>
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The Edit CP Parameters File option [KMPD PARAM EDIT] is located on the CP Tools Manager Menu [KMPD CM TOOLS MANAGER MENU]. It allows editing of the Capacity Planning (CP) parameters in the CP PARAMETERS file (#8973).

<b>Timing Monitor</b> (Synonym: TMT)	<b>[KMPD TMG MONITOR]</b>
---	---------------------------

The Timing Monitor option [KMPD TMG MONITOR] is located on the CP Tools Manager Menu [KMPD CM TOOLS MANAGER MENU]. This option updates itself automatically and displays the average number of seconds it takes Computerized Patient record System (CPRS) coversheets to load in a period of time. Data is displayed in a bar graph. The x-axis of the bar graph indicates the hours of the day (from 0 up to 24) and the y-axis indicates the average number of seconds it takes to load CPRS coversheets. This option can be left running on a terminal continuously collecting data.

The Timing Monitor displays data for each hour of the day and each new hour as it comes up (i.e., 0 – 24 hours). It updates the data according to the value in the MONITOR UPDATE RATE - MINUTES field (#19.01) in the CP PARAMETERS file (#8973). If there is no entry in Field #19.01, the default is every 10 minutes. The CPRS coversheet load data is displayed in a bar graph for each hour the Timing Monitor is running. If the Timing Monitor is run continuously, the cycle repeats every 24 hours overlaying/replacing previous data and adjusting the bar graph accordingly. The bar graph is also adjusted for the latest information gathered based on the value in the MONITOR UPDATE RATE - MINUTES field (#19.01) in the CP PARAMETERS file (#8973).

The Timing Monitor also displays an Alert Message near the bottom of the screen if the average number of seconds to load a CPRS coversheet exceeds the value of the MONITOR ALERT - SECONDS field (#19.02) in the CP PARAMETERS file (#8973). If there is no entry in Field #19.02, the default is 30 seconds. Both of these parameters can be edited using the Edit CP Parameters File option [KMPD PARAM EDIT].

<b>CP Tools Reports</b> (Synonym: RPT)	<b>[KMPD CM TOOLS REPORTS]</b>
---	--------------------------------

The CP Tools Reports menu [KMPD CM TOOLS REPORTS] is located under the CP Tools Manager Menu [KMPD CM TOOLS MANAGER MENU]. It contains the following option:

- Timing Reports [KMPD TMG REPORTS]

<b>Timing Reports</b> (Synonym: TMG)	<b>[KMPD TMG REPORTS]</b>
---	---------------------------

The Timing Reports menu [KMPD TMG REPORTS] is located under the CP Tools Reports menu [KMPD CM TOOLS REPORTS]. It contains the following report options:

- Average Daily Coversheet Load [KMPD TMG AVG TTL]
- Average Hourly Coversheet Load [KMPD TMG HRLY TTL]
- Detailed Daily Coversheet Load [KMPD TMG DLY TTL DETAIL]
- Detailed Hourly Coversheet Load [KMPD TMG HRLY TTL DETAIL]
- Threshold Alert [KMPD TMG TTL ALERT]
- Real-Time Threshold Alert [KMPD TMG TTL ALERT RT]

- Real-Time Average Hourly Coversheet Load [KMPD TMG HRLY TTL RT]

<b>Average Daily Coversheet Load</b> (Synonym: <b>AVD</b> )	<b>[KMPD TMG AVG TTL]</b>
--	---------------------------

The Average Daily Coversheet Load option [KMPD TMG AVG TTL] is located on the Timing Reports menu [KMPD TMG REPORTS]. It produces a report that displays the daily average time-to-load value for the coversheet at a site. Average time-to-load values are given for either daily prime time or non-prime time periods.

<b>Average Hourly Coversheet Load</b> (Synonym: <b>AVH</b> )	<b>[KMPD TMG HRLY TTL]</b>
---	----------------------------

The Average Hourly Coversheet Load option [KMPD TMG HRLY TTL] is located on the Timing Reports menu [KMPD TMG REPORTS]. It produces a report that displays the hourly average time-to-load value for the coversheet at a site over a 24-hour period.

<b>Detailed Daily Coversheet Load</b> (Synonym: <b>DTD</b> )	<b>[KMPD TMG DLY TTL DETAIL]</b>
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The Detailed Daily Coversheet Load option [KMPD TMG DLY TTL DETAIL] is located on the Timing Reports menu [KMPD TMG REPORTS]. It produces a report that displays the daily time-to-load values for the coversheet at a site. The report breaks the time-to-load metrics into ten second groupings.

<b>Detailed Hourly Coversheet Load</b> (Synonym: <b>DTH</b> )	<b>[KMPD TMG HRLY TTL DETAIL]</b>
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The Detailed Hourly Coversheet Load option [KMPD TMG HRLY TTL DETAIL] is located on the Timing Reports menu [KMPD TMG REPORTS]. It produces a report that displays the hourly time-to-load values for the coversheet at a site. The report breaks the time-to-load metrics into ten second groupings.

<b>Threshold Alert</b> (Synonym: <b>TAL</b> )	<b>[KMPD TMG TTL ALERT]</b>
--	-----------------------------

The Threshold Alert option [KMPD TMG TTL ALERT] is located on the Timing Reports menu [KMPD TMG REPORTS]. It produces a report that displays the particular coversheet loads that had excessive time-to-load values. This report searches for a particular person, client name, or Internet Protocol (IP) address.

<b>Real-Time Threshold Alert</b> (Synonym: <b>RTA</b> )	<b>[KMPD TMG TTL ALERT RT]</b>
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The Real-Time Threshold Alert option [KMPD TMG TTL ALERT RT] is located on the Timing Reports menu [KMPD TMG REPORTS]. It produces a report that displays the particular coversheet loads that have excessive time-to-load values for TODAY (real-time). This report searches for a particular person, client name, or Internet Protocol (IP) address.

<b>Real-Time Average Hourly Coversheet Load</b> (Synonym: <b>RAV</b> )	<b>[KMPD TMG HRLY TTL RT]</b>
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The Real-Time Average Hourly Coversheet Load option [KMPD TMG HRLY TTL RT] is located on the Timing Reports menu [KMPD TMG REPORTS]. It produces a report that displays the hourly average time-to-load value for the coversheet at a site over a 24-hour period.

## Options *Without* Parents

The following option does not appear on any menu:

Option Name	Option Menu Text	Type
KMPD BACKGROUND DRIVER	CM Tools Background Driver	Run Routine: KMPDBD01

**Table 6-2: CM Tools software-related exported or related options *without* parents**

<b>CM Tools Background Driver</b>	<b>[KMPD BACKGROUND DRIVER]</b>
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The CM Tools Background Driver option [KMPD BACKGROUND DRIVER] is *not* assigned to any menu. This option is scheduled through TaskMan to start the Capacity Management Tools software's background routine.

This option will compress the CM Tools statistics located in the CM HL7 DATA file (#8973.1) into daily statistics. This option must be queued to run each day on off hours.



Capacity Planning Services *strongly* recommends that the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] be scheduled to run every day at 1:30 a.m., because this background driver is the main mechanism by which the following sub-globals are purged nightly:

- ^KMPD(8973.1)—CM HL7 DATA file (#8973.1): Records are purged as prescribed by the Purge HL7 Data After CP parameter, which is stored in the HL7 WEEKS TO KEEP DATA field (#3.11) in the CP PARAMETERS file (#8973). This parameter is edited via the Edit CP Parameters File option [KMPD PARAM EDIT].
- ^KMPD(8973.2)—CP TIMING file (#8973.2): Records are purged as prescribed by the Purge Timing Data After CP parameter, which is stored in the TIMING WEEKS TO KEEP DATA field (#4.11) in the CP PARAMETERS file (#8973). This parameter is edited via the Edit CP Parameters File option [KMPD PARAM EDIT].

Modification of the frequency and time may have adverse effects on the size of the temporary ^KMPD(8973.1) and ^KMPD(8973.2) sub-globals and on the number of entries within the CM HL7 DATA file (#8973.1) and CP TIMING (#8973.2) files.

This option should be (re)scheduled with the Schedule/Unschedule Options option [XUTM SCHEDULE] located under the Taskman Management menu [XUTM MGR].



For more information on any of these options, please refer to Chapter 3, "CM Tools: Options," in the *Capacity Management Tools User Manual*.

## Protocols

The Capacity Management Tools software does *not* export any protocols with this version.



# Chapter 7: Archiving and Purging

## Archiving

The Capacity Management Tools software contains two files that are purged:

- CM HL7 DATA (#8973.1)
- CP TIMING file (#8973.2)

Every Sunday night, the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] monitors and trims (records deleted) the following files to ensure that the correct maximum number of day's data is maintained as determined by the appropriate CP parameters:

- CM HL7 DATA file (#8973.1)—Records are purged as prescribed by the Purge HL7 Data After CP parameter, which is stored in the HL7 WEEKS TO KEEP DATA field (#3.11) in the CP PARAMETERS file (#8973). This parameter is edited via the Edit CP Parameters File option [KMPD PARAM EDIT].
- CP TIMING file (#8973.2)—Records are purged as prescribed by the Purge Timing Data After CP parameter, which is stored in the TIMING WEEKS TO KEEP DATA field (#4.11) in the CP PARAMETERS file (#8973). This parameter is edited via the Edit CP Parameters File option [KMPD PARAM EDIT].

Since the Capacity Management Tools software automatically maintains a fixed amount of data at the site, archiving functions are not necessary and are not provided.



For more information on the CM Tools Background Driver option and the CP parameters, please refer to Chapter 3, "CM Tools: Options," in the *Capacity Management Tools User Manual*.

## Purging

Resource usage data is accumulated into the ^TMP("KMPDH",\$J) temporary collection global and is purged (killed) every day at 1:30 a.m. by the CM Tools Background Driver option [KMPD BACKGROUND DRIVER] after being moved into the following files:

- CM HL7 DATA (#8973.1)
- CP TIMING file (#8973.2)



For more information on the ^TMP("KMPDH",\$J) global, please refer to Chapter 4, "Global Translation, Journaling, and Protection," in this manual.

The CM Tools Background Driver option [KMPD BACKGROUND DRIVER] monitors and trims (records deleted) the following files to ensure that the correct maximum number of day's data is maintained as determined by the appropriate CP parameters:

- CM HL7 DATA file (#8973.1)—Records are purged as prescribed by the Purge HL7 Data After CP parameter, which is stored in the HL7 WEEKS TO KEEP DATA field (#3.11) in the CP PARAMETERS file (#8973). This parameter is edited via the Edit CP Parameters File option [KMPD PARAM EDIT].
- CP TIMING file (#8973.2)—Records are purged as prescribed by the Purge Timing Data After CP parameter, which is stored in the TIMING WEEKS TO KEEP DATA field (#4.11) in the CP PARAMETERS file (#8973). This parameter is edited via the Edit CP Parameters File option [KMPD PARAM EDIT].

Since the Capacity Management Tools software automatically maintains a fixed amount of data at the site, purging functions are not necessary and are *not* provided.



For more information on the CM HL7 DATA (#8973.1) and CP TIMING (#8973.2) files, please refer to Chapter 3, "Files," in this manual.



For more information on the CM Tools Background Driver option and CP parameters, please refer to Chapter 3, "CM Tools: Options," in the *Capacity Management User Manual*.

## Chapter 8: Callable Routines

This version of the Capacity Management Tools software does *not* provide any callable routine entry points (i.e., Application Program Interfaces [APIs]) that are available for general use.



# Chapter 9: External Relations

## VistA Software Requirements

The Capacity Management Tools software relies on the following VistA software to run effectively (listed alphabetically):

Software	Version	Patch Information
Computerized Patient Record System (CPRS) GUI	23.0	Fully patched.
Order Entry/Results Reporting (OE/RR)	3.0	The CM Tools software loads without CPRS GUI V. 23 and OE/RR V. 3.0; however, in order to start collecting timing data and enable the data collection and report-related CM Tools software options, Patch OR*3.0*209 must also be installed.
Health Level Seven (HL7)	1.6	Fully patched. This version of Capacity Management Tools software loads without VistA Health Level Seven (HL7) Patch HL*1.6*79; however, in order to start collecting HL7 statistics, HL7 Patch #79 must also be installed.
Kernel	8.0	Fully patched.
Kernel Toolkit	7.3	Fully patched.
MailMan	8.0	Fully patched.
VA FileMan	22.0	Fully patched.

**Table 9-1: External Relations—VistA software**

This version of Capacity Management Tools software utilizes a VistA Health Level Seven (HL7) HLUCM routine that contains a specific API call for the Capacity Planning (CP) Services software developers. The HLUCM routine contains code that enables use of the \$\$CM API call to obtain HL7 usage information. The Health Level Seven HLUCM routine was introduced with the issuance of Health Level Seven Patch HL\*1.6\*79.

Also, this software depends on the installation of the Computerized Patient Record System (CPRS) in order to run the data collection and report-related CM Tools software options.

## DBA Approvals and Database Integration Agreements

The Database Administrator (DBA) maintains a list of Integration Agreements (IAs) or mutual agreements between software developers allowing the use of internal entry points or other software-specific features that are not available to the general programming public.

This version of Capacity Management Tools software is *not* dependent on any agreements.

**To obtain the current list of IAs, if any, to which the Capacity Planning (CP) Services' CM Tools software (KMPD) is a custodian:**

1. Sign on to the FORUM system (forum.va.gov).
2. Go to the DBA menu [DBA].
3. Select the Integration Agreements Menu option [DBA IA ISC].
4. Select the Custodial Package Menu option [DBA IA CUSTODIAL MENU].
5. Choose the ACTIVE by Custodial Package option [DBA IA CUSTODIAL].
6. When this option prompts you for a package, enter **CAPACITY MANAGEMENT TOOLS** or **KMPD**
7. All current IAs to which the Capacity Planning (CP) Services' RUM software is a custodian are listed.

**To obtain detailed information on a specific integration agreement:**

1. Sign on to the FORUM system (forum.va.gov).
2. Go to the DBA menu [DBA].
3. Select the Integration Agreements Menu option [DBA IA ISC].
4. Select the Inquire option [DBA IA INQUIRY].
5. When prompted for "INTEGRATION REFERENCES," enter the specific integration agreement number of the IA you would like to display.
6. The option then lists the full text of the IA you requested.

**To obtain the current list of IAs, if any, to which the Capacity Planning (CP) Services' CM Tools software (KMPD) is a subscriber:**

1. Sign on to the FORUM system (forum.va.gov).
2. Go to the DBA menu [DBA].
3. Select the Integration Agreements Menu option [DBA IA ISC].
4. Select the Subscriber Package Menu option [DBA IA SUBSCRIBER MENU].
5. Choose the Print ACTIVE by Subscribing Package option [DBA IA SUBSCRIBER].
6. When prompted with "START WITH SUBSCRIBING PACKAGE," enter **KMPD** (in uppercase).  
When prompted with "GO TO SUBSCRIBING PACKAGE," enter **KMPD** (in uppercase).
7. All current IAs to which the Capacity Planning (CP) Services' CM Tools software is a subscriber are listed.

# Chapter 10: Internal Relations

## Option Dependencies

All options in the Capacity Management Tools software under the CP Tools Manager Menu [KMPD MANAGER MENU] can function independently.

Only TaskMan's Schedule/Unschedule Options option [XUTM SCHEDULE], located under the Taskman Management menu [XUTM MGR], can invoke the CM Tools Background Driver option [KMPD BACKGROUND DRIVER].



For more information regarding the Capacity Management Tools options, please refer to Chapter 3, "CM Tools: Options," in the *Capacity Management Tools User Manual*.

## Relationship of CM Tools Software with VistA

### CPRS GUI V. 23.0 and OE/RR V. 3

This version of Capacity Management Tools software loads without CPRS GUI V. 23 and OE/RR V. 3.0; however, in order to start collecting timing data and enable the data collection and report-related CM Tools software options, Patch OR\*3.0\*209 must also be installed.



For more information on the CM Tools report-related software options, please refer to "Timing Reports" topic in the "Exported Options" chapter in this manual.

### HL7 V. 1.6

This version of Capacity Management Tools software loads without VistA Health Level Seven (HL7) Patch HL\*1.6\*79; however, in order to start collecting HL7 statistics, HL7 Patch #79 must also be installed.

HL7 Patch #79 created the following three APIs, which are used for calculating the volume of HL7 activity at a site over a user-defined period of time:

- \$\$CM^HLUCM
- \$\$CM2^HLUCM
- \$\$CM2F^HLUCM

These APIs calculate the volume of HL7 activity over a period of time. The information collected includes the following:

- Total number characters in the messages.
- Total Number of messages or message units.
- Total time elapsed for transmission of messages.



For more information regarding VistA HL7 Patch HL\*1.6\*103 and the APIs, please refer to the HL\*1.6\*103 patch description in the Patch Module on FORUM.

## Namespace

Capacity Planning (CP) Services has been given the KMP\* namespace for both routines and global(s). The Capacity Management Tools software utilizes the KMPD namespace for its routines and global. Therefore, you should review your translation table setting(s) to determine the proper placement for the KMP\* global namespace.

# Chapter 11: Software-wide and Key Variables

The Capacity Management Tools software does *not* employ the use of software-wide or key variables.



## Chapter 12: SAC Exemptions

This version of the Capacity Management Tools software does *not* have any Programming Standards and Conventions (SAC) exemptions.



# Chapter 13: Software Product Security

## Security Management

There are *no* special legal requirements involved in the use of the Capacity Management Tools software.

## Mail Groups and Alerts

### Mail Groups

This version of the Capacity Management Tools software creates the following mail group:

KMP-CAPMAN.

### Alerts

This version of the Capacity Management Tools software does *not* make use of alerts.

## Remote Systems

This version of the Capacity Management Tools software transmits the following to the Capacity Planning National Database located at the Albany OI Field Office:

- **VistA Health Level Seven (HL7) Workload Information**—VistA HL7 workload data is summarized and transmitted on a weekly basis.
- **VistA Timing Data**—Timing data is summarized and transmitted on a daily and weekly basis.

Data collected is automatically transferred via network mail (i.e., VistA MailMan) to the Capacity Planning National Database. The data is displayed graphically on the Capacity Planning Statistics Web page located at:

<http://vista.med.va.gov/capman/Statistics/Default.htm>



For more information on the Capacity Planning National Database and data display, please refer to the "Statistics and Projections" topic in Chapter 2, "CM Tools: Software Overview and Use," in the *Capacity Management Tools User Manual*.

## Interfacing

No *non-VA* products are embedded in or required by this version of the Capacity Management Tools software, other than those provided by the underlying operating systems.

## Electronic Signatures

There are *no* electronic signatures used within this version of the Capacity Management Tools software.

## Security Keys

There are *no* specific security keys exported with this version of the Capacity Management Tools software.

## File Security

This version of the Capacity Management Tools software establishes the following security over its files:

File Number	File Name	DD	RD	WR	DEL	LAYGO	AUDIT
8972	CP CODE EVALUATOR	@	@	@	@	@	@
8973	CP PARAMETERS	@	@	@	@	@	@
8973.1	CM HL7 DATA	@	@	@	@	@	@
8973.2	CP TIMING	@	@	@	@	@	@

**Table 13-1: CM Tools VA FileMan file protection**

## Official Policies

There are *no* special legal requirements involved in the use of the Capacity Management Tools software interface.

Distribution of the Capacity Management Tools software is unrestricted.

# Glossary

AAC	Austin Automation Center.
ADPAC	Automated <b>D</b> ata <b>P</b> rocessing <b>A</b> pplication <b>C</b> oordinator.
ANSI	American National Standards Institute.
API	Application <b>P</b> rogram <b>I</b> nterface.
APPLICATION	VistA software and documentation that supports the automation of a service (e.g., Laboratory or Pharmacy) within the Veterans Health Administration (VHA).
APPLICATION PROGRAM INTERFACE (API)	Program calls provided for use by application programmers. APIs allow programmers to carry out standard computing activities without needing to duplicate utilities in their own software. APIs also further DBA goals of system integration by channeling activities, such as adding new users, through a limited number of callable entry points.
ARRAY	An arrangement of elements in one or more dimensions. An M array is a set of nodes referenced by subscripts that share the same variable name.
BULLETINS	Electronic mail messages that are automatically delivered by VistA MailMan under certain conditions. For example, a bulletin can be set up to "fire" when database changes occur, such as adding a new Institution in the INSTITUTION file (#4). Bulletins are fired by bulletin-type cross-references.
CALLABLE ENTRY POINT	Authorized program call that may be used in any VistA application software. The DBA maintains the list of DBIC-approved entry points.
CAPACITY PLANNING	The process of assessing a system's capacity and evaluating its efficiency relative to workload in an attempt to optimize system performance. (Formerly known as Capacity Management.)
CHUI	<b>C</b> haracter-based <b>U</b> ser <b>I</b> nterface (i.e., roll-and-scroll).
CM TOOLS	Capacity <b>M</b> anagement <b>T</b> ools. A fully automated support tool developed by Capacity Planning (CP) Services, which entails the daily capture of VistA HL7 workload information from participating sites.
CO	Central <b>O</b> ffice.
CROSS REFERENCE	There are several types of cross-references available. Most generally, a VA FileMan cross-reference specifies that some action be performed when the field's value is entered, changed, or deleted. For several types of cross-references, the action consists of putting the value into a list; an index used when looking-up an entry or when sorting. The regular cross-reference is used for sorting and for lookup; you can limit it to sorting only.

DATA	A representation of facts, concepts, or instructions in a formalized manner for communication, interpretation, or processing by humans or by automatic means. The information you enter for the computer to store and retrieve. Characters that are stored in the computer system as the values of local or global variables. VA FileMan fields hold data values for file entries.
DATA DICTIONARY (DD)	<p>The <b>Data Dictionary</b> is a global containing a description of what kind of data is stored in the global corresponding to a particular file. VA FileMan uses the data internally for interpreting and processing files.</p> <p>A Data Dictionary contains the definitions of a file's elements (fields or data attributes); relationship to other files; and structure or design. Users generally review the definitions of a file's elements or data attributes; programmers review the definitions of a file's internal structure.</p>
DBA	<b>Database Administrator</b> , oversees software development with respect to VistA Standards and Conventions (SAC) such as namespacing. Also, this term refers to the Database Administration function and staff.
DBIA	<b>Database Integration Agreement</b> , a formal understanding between two or more VistA software applications that describes how data is shared or how software interacts. The DBA maintains a list of DBIAs.
DEFAULT	Response the computer considers the most probable answer to the prompt being given. It is identified by double slash marks (//) immediately following it. This allows you the option of accepting the default answer or entering your own answer. To accept the default you simply press the Enter (or Return) key. To change the default answer, type in your response.
DELIMITER	Special character used to separate a field, record, or string. VA FileMan uses the caret character ("^") as the delimiter within strings.
DIRECT MODE UTILITY	A program call that is made when working in direct programmer mode. A direct mode utility is entered at the MUMPS prompt (e.g., >D ^XUP). Calls that are documented as direct mode utilities <i>cannot</i> be used in application software code.
DoD	<b>Department of Defense.</b>
ENCRYPTION	"Cryptographic transformation of data (plaintext) into a form (ciphertext) that conceals the data's original meaning to prevent it from being known or used."1
ENTRY	VA FileMan record. An internal entry number (IEN, the .001 field) uniquely identifies an entry in a file.
EVS	<b>Enterprise VistA Support</b> (formerly known as NVS).
EXTRINSIC FUNCTION	Extrinsic function is an expression that accepts parameters as input and returns a value as output that can be directly assigned.

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DEA Web site ([http://www.deadiversion.usdoj.gov/ecommm/e\\_rx/con\\_ops/index.html](http://www.deadiversion.usdoj.gov/ecommm/e_rx/con_ops/index.html)): "Public Key Infrastructure Analysis Concept of Operations," Section 3.4.1 "Terms and Definitions"

FACILITY	Geographic location at which VA business is performed.
FIELD	In a record, a specified area used for the value of a data attribute. The data specifications of each VA FileMan field are documented in the file's data dictionary. A field is similar to blanks on forms. It is preceded by words that tell you what information goes in that particular field. The blank, marked by the cursor on your terminal screen, is where you enter the information.
FILE	Set of related records treated as a unit. VA FileMan files maintain a count of the number of entries or records.
FILE MANAGER (VA FILEMAN)	VistA's Database Management System (DBMS). The central component of Kernel that defines the way standard VistA files are structured and manipulated.
FORM	Please refer to the Glossary entry for "ScreenMan Forms."
FORUM	The central E-mail system within VistA. Developers use FORUM to communicate at a national level about programming and other issues. FORUM is located at the Washington, DC OI Field Office (162-2).
FREE TEXT	A DATA TYPE that can contain any printable characters.
GAL	<b>Global Address List.</b>
GLOBAL VARIABLE	Variable that is stored on disk (M usage).
GUI	<b>Graphical User Interface.</b>
HEC	<b>Health Eligibility Center.</b>
HEALTH LEVEL SEVEN (HL7)	National level standard for data exchange in all healthcare environments regardless of individual computer applications.
HEALTH LEVEL SEVEN (HL7) VISTA	Messaging system developed as VistA software that follows the HL7 Standard for data exchange.
HIPAA	<b>Health Insurance Portability and Accountability Act.</b>
HSD&D	<b>Health Systems Design and Development.</b>
INPUT TEMPLATE	A pre-defined list of fields that together comprise an editing session.
INSTITUTION	A Department of Veterans Affairs (VA) facility assigned a number by headquarters, as defined by Directive 97-058. An entry in the INSTITUTION file (#4) that represents the Veterans Health Administration (VHA).
INTEGRATION AGREEMENTS (IA) (Formerly known as DATABASE INTEGRATION AGREEMENTS [DBIA])	<b>Integration Agreements (IA)</b> define agreements between two or more VistA software applications to allow access to one development domain by another. Any software developed for use in the VistA environment is required to adhere to this standard; as such it applies to vendor products developed within the boundaries of DBA assigned development domains (e.g., MUMPS AudioFax). An IA defines the attributes and functions that specify access. All IAs are recorded in the Integration Agreement database on FORUM. Content can be viewed using the DBA menu or the Health Systems Design & Development's Web page.

## Glossary

INTERNAL ENTRY NUMBER (IEN)	The number used to identify an entry within a file. Every record has a unique internal entry number.
IRA	<b>Initial Request Analysis.</b>
IRM	<b>Information Resource Management.</b> A service at VA medical centers responsible for computer management and system security.
ISO	<b>Information Security Officer.</b>
ISS	<b>Infrastructure and Security Services.</b>
ITAC	<b>Information Technology Approval Committee</b> was established as an advisory committee to the Chief Information Officer to ensure that the Information Technology (IT) program supports VHA goals and to provide guidance concerning priorities for IT initiatives.
IV&V	<b>Independent Validation and Verification Team</b> acts to ensure the functional integrity and technical correctness of HSD&D software, processes, and documentation.
KERNEL	Kernel is VistA software that functions as an intermediary between the host operating system and other VistA software applications (e.g., Laboratory, Pharmacy, IFCAP, etc.). Kernel provides a standard and consistent user and program interface between software applications and the underlying M implementation.
LAN	<b>Local Area Network.</b>
LDAP	<b>Lightweight Directory Access Protocol.</b>
LINK	Non-specific term referring to ways in which files may be related (via pointer links). Files have links into other files.
MAILMAN	VistA software that provides a mechanism for handling electronic communication, whether it's user-oriented mail messages, automatic firing of bulletins, or initiation of server-handled data transmissions.
MENU	List of choices for computing activity. A menu is a type of option designed to identify a series of items (other options) for presentation to the user for selection. When displayed, menu-type options are preceded by the word "Select" and followed by the word "option" as in Select Menu Management option: (the menu's select prompt).
MENU SYSTEM	The overall Menu Manager logic as it functions within the Kernel framework.
MENU TEXT	The descriptive words that appear when a list of option choices is displayed. Specifically, the Menu Text field of the OPTION file (#19). For example, User's Toolbox is the menu text of the XUSERTOOLS option. The option's synonym is TBOX.
NAMESPACING	Convention for naming VistA software elements. The DBA assigns unique two to four character string prefix for software developers to use in naming routines, options, and other software elements so that software can coexist. The DBA also assigns a separate range of file numbers to each software application.
NVS	<b>National VistA Support</b> (now known as EVS).

OIFO	Office of Information Field Office.
OPTION	An entry in the OPTION file (#19). As an item on a menu, an option provides an opportunity for users to select it, thereby invoking the associated computing activity. Options may also be scheduled to run in the background, non-interactively, by TaskMan.
OPTION NAME	Name field in the OPTION file (e.g., XUMAINT for the option that has the menu text "Menu Management"). Options are namespaced according to VistA conventions monitored by the DBA.
PACKAGE	Please refer to the Glossary entry for "Software."
POINTER	The address at which a data value is stored in computer memory. A relationship between two VA FileMan files, a pointer is a file entry that references another file (forward or backward). Pointers can be an efficient means for applications to access data by referring to the storage location at which the data exists.
PRIMARY KEY	A Data Base Management System construct, where one or more fields uniquely define a record (entry) in a file (table). The fields are required to be populated for every record on the file, and are unique, in combination, for every record on the file.
PRIVATE INTEGRATION AGREEMENT	Where only a single application is granted permission to use an attribute/function of another VistA software application. These IAs are granted for special cases, transitional problems between versions, and release coordination. A Private IA is also created by the requesting software application based on their examination of the custodian software application's features. An example would be where one software application distributes a patch from another software application to ensure smooth installation.
PROMPT	The computer interacts with the user by issuing questions called prompts, to which the user issues a response.
RECORD	Set of related data treated as a unit. An entry in a VA FileMan file constitutes a record. A collection of data items that refer to a specific entity (e.g., in a name-address-phone number file, each record would contain a collection of data relating to one person).
REQUIRED FIELD	A mandatory field, one that must not be left blank. The prompt for such a field will be repeated until the user enters a valid response.
REVERSE VIDEO	The reversal of light and dark in the display of selected characters on a video screen. For example, if text is normally displayed as black letters on a white background, reverse video presents the text as white letters on a black background or vice versa.
ROUTINE	Program or a sequence of instructions called by a program that may have some general or frequent use. M routines are groups of program lines, which are saved, loaded, and called as a single unit via a specific name.

## Glossary

SAC	Standards and Conventions. Through a process of quality assurance, all VistA software is reviewed with respect to SAC guidelines as set forth by the Standards and Conventions Committee (SACC).
SACC	VistA's Standards and Conventions Committee. This Committee is responsible for maintaining the SAC.
SCREEN EDITOR	VA FileMan's Screen-oriented text editor. It can be used to enter data into any WORD-PROCESSING field using full-screen editing instead of line-by-line editing.
SCREENMAN FORMS	Screen-oriented display of fields, for editing or simply for reading. VA FileMan's Screen Manager is used to create forms that are stored in the FORM file (#.403) and exported with a software application. Forms are composed of blocks (stored in the BLOCK file [#.404]) and can be regular, full screen pages or smaller, "pop-up" pages.
SCREEN-ORIENTED	A computer interface in which you see many lines of data at a time and in which you can move your cursor around the display screen using screen navigation commands. Compare to Scrolling Mode.
SCROLLING MODE	The presentation of the interactive dialog one line at a time. Compare to Screen-oriented.
SEPG	Software Engineering Process Group.
SOFTWARE	The set of programs, files, documentation, help prompts, and installation procedures required for a given software application (e.g., Laboratory, Pharmacy, and PIMS). A VistA software environment is composed of elements specified via the PACKAGE file (#9.4). Elements include files, associated templates, namespaced routines, and namespaced file entries from the OPTION, HELP FRAME, BULLETIN, and FUNCTION files. As public domain software, VistA software can be requested through the Freedom of Information Act (FOIA).
SUPPORTED REFERENCE INTEGRATION AGREEMENT	This applies where any VistA application may use the attributes/functions defined by the IA (these are also called " <b>Public</b> "). An example is an IA that describes a standard API such as DIE or VADPT. The software that creates/maintains the Supported Reference must ensure it is recorded as a Supported Reference in the IA database. There is no need for other VistA software applications to request an IA to use these references; they are open to all by default.
TEMPLATE	Means of storing report formats, data entry formats, and sorted entry sequences. A template is a permanent place to store selected fields for use at a later time. Edit sequences are stored in the INPUT TEMPLATE file (#.402), print specifications are stored in the PRINT TEMPLATE file (#.4), and search or sort specifications are stored in the SORT TEMPLATE file (#.401).

TOOLKIT	<p>Toolkit (or Kernel Toolkit) is a robust set of tools developed to aid the VistA development community, and Information Resources Management (IRM), in writing, testing, and analysis of code. They are a set of generic tools that are used by developers, technical writers, software quality assurance (SQA) personnel, and software applications to support distinct tasks.</p> <p>Toolkit provides utilities for the management and definition of development projects. Many of these utilities have been used by the OI Field Office–Oakland for internal management and have proven valuable. Toolkit also includes tools provided by other OI Field Offices based on their proven utility.</p>
TRIGGER	<p>A type of VA FileMan cross-reference. Often used to update values in the database given certain conditions (as specified in the trigger logic). For example, whenever an entry is made in a file, a trigger could automatically enter the current date into another field holding the creation date.</p>
VA	<p>The Department of Veterans Affairs, formerly called the Veterans Administration.</p>
VA FILEMAN	<p>Set of programs used to enter, maintain, access, and manipulate a database management system consisting of files. A software application of online computer routines written in the M language, which can be used as a standalone database system or as a set of application utilities. In either form, such routines can be used to define, enter, edit, and retrieve information from a set of computer stored files.</p>
VAMC	<p>Veterans Affairs Medical Center.</p>
VARIABLE	<p>Character, or group of characters, that refer(s) to a value. M (previously referred to as MUMPS) recognizes 3 types of variables: local variables, global variables, and special variables. Local variables exist in a partition of main memory and disappear at sign-off. A global variable is stored on disk, potentially available to any user. Global variables usually exist as parts of global arrays. The term "global" may refer either to a global variable or a global array. A special variable is defined by systems operations (e.g., \$TEST).</p>
VHA	<p>Veterans Health Administration.</p>
VISN	<p>Veterans Integrated Service Network.</p>
VISTA	<p>Veterans Health Information Systems and Technology Architecture (VistA) of the Veterans Health Administration (VHA), Department of Veterans Affairs (VA). VistA software, developed by the VA, is used to support clinical and administrative functions at VHA sites nationwide. Server-side code is written in M, and, via Kernel, runs on all major M implementations regardless of vendor. VistA is composed of software that undergoes a quality assurance process to ensure conformity with namespacing and other VistA standards and conventions.</p>
WAN	<p>Wide Area Network.</p>



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