KERNEL TOOLKIT

TECHNICAL MANUAL

Version 7.3

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Preface

The purpose of this manual is to provide information about the structure of the set of software utilities known as the Kernel Toolkit (also referred to as "Toolkit"). This manual consists of technical material specifically intended for DHCP systems managers and developers.

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Introduction

The Kernel Toolkit is a robust set of tools developed to aid the Decentralized Hospital Computer Program (DHCP) development community and Information Resources Management (IRM) in writing, testing, and analysis of code. It is a set of generic tools that are used by developers, documenters, verifiers, and packages to support distinct tasks.

The Kernel Toolkit provides utilities for the management and definition of development projects. Many of these utilities have been used by the San Francisco Information Systems Center (ISC) for internal management and have proven valuable. Kernel Toolkit provides many programming and system management tools, and interacts directly with the underlying MUMPS (Massachusetts General Hospital Utility Multi-Programming System) environment in many different ways.

Also included in Kernel Toolkit are the following tools provided by other ISCs, and supported by the San Francisco ISC, based on their proven utility:

Multi-Term Look-Up (MTLU){ XE "Multi-Term Look-Up (MTLU)" **}:**

Many medical information systems depend on the standardized encoding of diagnoses and procedures for reports, searches, and statistics. The ICD DIAGNOSIS (#80){ XE "ICD DIAGNOSIS file" }{ XE "Files:ICD DIAGNOSIS" }, ICD OPERATIONS/PROCEDURE (#80.1){ XE "ICD OPERATIONS/PROCEDURE file" }{ XE "Files:ICD OPERATIONS/PROCEDURE" }, and CPT (#81){ XE "CPT file" }{ XE "Files:CPT" } files are among some of the more critical files. The Multi-Term Look-Up utility increases the accessibility of the information in these files by associating user supplied words or phrases with terms found in a more descriptive, free-text field.

Multi-Term Look-Up enables:

- Local set-up of virtually any reference file.

- Developers to modify the behavior of the "special" look-up by defining shortcuts, keywords, or synonyms.

Multi-Term Look-Up integrates with any package that uses a reference file which has been entered in a site's LOCAL LOOKUP file (#8984.4){ XE "LOCAL LOOKUP file" }{ XE "Files:LOCAL LOOKUP" }.

Duplicate Resolution Utilities{ XE "Duplicate Resolution Utilities," **}:**

The Duplicate Resolution Utilities give programmers a shell that allows their users to check their data files for duplicates and merge them if any are found. They provide the functionality of combining duplicate records based on

conditions established in customized applications. There are two files involved, the DUPLICATE RECORD file (#15){ XE "DUPLICATE RECORD file" }{ XE "Files:DUPLICATE RECORD" } and the DUPLICATE RESOLUTION file (#15.1){ XE "DUPLICATE RESOLUTION file" }{ XE "Files:DUPLICATE RESOLUTION" }. The Merge Shell was developed by the IHS (Indian Health Service) to support their Multi-Facility Integration project.

Readers who wish to learn more about the Kernel Toolkit should consult these related manuals:

- *Kernel Toolkit Release Notes Version 7.3*
- *Kernel Toolkit Installation Guide V. 7.3*
- *Kernel Toolkit User Manual V. 7.3*
- *Kernel Toolkit Package Security Guide V. 7.3*
- The *MIRMO/ISC Operations Document*, "Chapter 10"
- *Programming Standards and Conventions (SAC)*

Orientation

This manual is intended for use in conjunction with Toolkit package. Items included in the release of the Kernel Toolkit, such as routines and files, are only briefly described for quick reference. To gain a comprehensive understanding of the internal mechanisms of the Kernel Toolkit, the user needs to read the *Kernel Toolkit User Manual Version 7.3* and follow with a query of the system software itself.

This manual uses several methods to highlight different aspects of the material. Descriptive text is presented in a proportional font. "Snapshots" of computer dialogue (and other on-line displays) are shown in a non-proportional font and enclosed within a box. Editor's comments within a dialogue are displayed in italics. Italics are also used to emphasize a particular word or phrase within a sentence. The user's responses to on-line prompts are highlighted in boldface. Boldface is also used to highlight a particular topic.

The Return key is used to terminate "reads". It is illustrated as **<RET>** and is included in examples only when it might be unclear to the reader that such a keystroke must be entered. The following example indicates that you should enter two question marks followed by pressing the Return key when prompted to select a menu option:

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

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

After introducing the idea of a prompt and describing how it appears within the menu system, further references to that prompt might use an abbreviated form of the prompt name. For example, the "Select Primary Menu option:" prompt may be referred to as the select prompt after the initial description.

Programmer calls that are supported for use in application packages (on the Database Integration Committee (DBIC) list) are presented with a leading bullet, or indented, and include the up-arrow (^) used when calling the routine. The following is an example:

```
EN1^XQH
```

Direct mode utilities are prefaced with the MUMPS prompt to emphasize that the call is to be used *only in direct mode*. They also include the MUMPS command used to invoke the utility. The following is an example:

```
>D ^XUP
```

Implementation and Maintenance

The *Kernel Toolkit Installation Guide V. 7.3* has detailed information regarding the installation of Toolkit. Kernel V. 7.1 must be in place before Installing Toolkit. The steps for Installing Kernel V. 7.1 are explained in the *Kernel Installation Guide.* The *Kernel Toolkit Installation Guide V. 7.3* also contains many requirements and recommendations regarding how Kernel should be configured. Be sure to read the Guide before attempting to install Toolkit.

Other areas of this manual contain recommendations for global mapping, journaling, translation, and replication.
{ XE "Installation" **}**

IMPLEMENTING MULTI-TERM LOOK-UP
{ XE "Multi-Term Look-Up (MTLU):Implementing" **}**

Central Processing Unit (CPU) capacity; 3%.

Disk Space; 20,000 bytes. However, this depends on the number of entries in the LOCAL KEYWORD (#8984.1)**{** XE "LOCAL KEYWORD file" **}{** XE "Files:LOCAL KEYWORD" **}**, LOCAL SHORTCUT (#8984.2)**{** XE "LOCAL SHORTCUT file" **}{** XE "Files:LOCAL SHORTCUT" **}**, and LOCAL SYNONYM (#8984.3)**{** XE "LOCAL SYNONYM file" **}{** XE "Files:LOCAL SYNONYM" **}** files.

The Multi-Term Look-Up utility has one parameter which may be adjusted to meet the needs of an individual site. Whenever a new file is entered through the Add Entries To Look-Up File option, an additional MUMPS cross-reference**{** XE "MUMPS Cross-reference" **}** is necessary on a free-text field of the new file. This reference converts the free-text field into keywords to be used in the search. In order to utilize the full functionality of the package, the cross-reference entry on the free-text field should match the INDEX field in the LOCAL LOOKUP file (#8984.4)**{** XE "LOCAL LOOKUP file" **}{** XE "Files:LOCAL LOOKUP" **}**. In the following example for the ICD DIAGNOSIS file (#80)**{** XE "ICD DIAGNOSIS file" **}{** XE "Files:ICD DIAGNOSIS" **}**, "AIHS" is entered on the free-text field as a cross-reference. "AIHS", therefore, must match the entry made at the Local Look-up INDEX prompt in the Add Entries To Look-Up File option.

Once you are in VA FileMan, do the following:

```
Select OPTION: UTILITY FUNCTIONS
Select UTILITY OPTION: CROSS-REFERENCE A FIELD

MODIFY WHAT FILE: ICD DIAGNOSIS// ICD DIAGNOSIS
                                    (12535 entries)
Select FIELD: DESCRIPTION

CURRENT CROSS-REFERENCE IS MUMPS 'D' INDEX OF FILE
CHOOSE E (EDIT)/D (DELETE)/C (CREATE): C <RET>
```

```
WANT TO CREATE A NEW CROSS-REFERENCE FOR THIS FIELD? NO// Y <RET>   (YES)
CROSS-REFERENCE NUMBER: 2// <RET>
Select TYPE OF INDEXING: REGULAR// MUMPS
```

```
WANT CROSS-REFERENCE TO BE USED FOR LOOKUP AS WELL AS FOR SORTING? YES// N
<RET>  (NO)
SET STATEMENT: S %="^ICD9(""AIHS"",I,DA)" D S^XTLKWIC
KILL STATEMENT: S %="^ICD9(""AIHS"",I,DA)" D K^XTLKWIC
INDEX: AC// AIHS
...
DO YOU WANT TO CROSS-REFERENCE EXISTING DATA NOW? YES// Y <RET>  (YES)
...EXCUSE ME, LET ME THINK ABOUT THAT A MOMENT.................
..................................................
>D ^XUP

Setting up programmer environment
Terminal Type set to: C-VT100
Select OPTION NAME: APPLICATION UTILITIES  XTMENU      Application Utilities

          Multi-Term Lookup Main Menu ...

Select Application Utilities Option: Multi-Term Lookup Main Menu

          Multi-Term Lookup (MTLU)
          Print Utility
          Utilities for MTLU ...

Select Multi-Term Lookup Main Menu Option: Utilities for MTLU

   KL      Delete Entries From Look-up
   ST      Add Entries To Look-Up File
          Add/Modify Utility ...

Select Utilities for MTLU Option: ST <RET> Add Entries To Look-Up File
Select LOCAL LOOKUP NAME: ICD DIAGNOSIS
  ARE YOU ADDING 'ICD DIAGNOSIS' AS A NEW LOCAL LOOKUP (THE 3RD)? Y <RET>
      (YES)
   LOCAL LOOKUP NAME: ICD DIAGNOSIS//  <RET>
   LOCAL LOOKUP DISPLAY PROTOCOL:  <RET>
INDEX: AIHS
...Ok, will now setup KEYWORD and SHORTCUT file DD's
   to allow terms for 'ICD DIAGNOSIS' entries...
PREFIX: M// ?
     Answer must be a unique prefix, 1-10 characters in length
PREFIX: M// D    (NOTE:  Enter the "Variable Pointer" prefix.)
  <REMINDER> Using 'Edit File', set the lookup routine, XTLKDICL, in 'ICD
      DIAGNOSIS DD
Select LOCAL LOOKUP NAME: <RET>
```

NOTE: Using the FileMan Edit File [DIEDIT]{ XE "Edit File option [DIEDIT]" }
      option{ XE "DIEDIT" }, enter XTLKDICL{ XE "XTLKDICL" } at the Look-
      Up Program prompt. Data should be cross-referenced when installing the
      cross-reference. If not, data should be re-indexed after hours since this may
      be CPU intensive.

IMPLEMENTING DUPLICATE RESOLUTION UTILITIES

Data Storage{ XE "Duplicate Resolution Utilities:Implementing:Data Storage" **}:**

Each entry in the DUPLICATE RECORD file (#15){ XE "DUPLICATE RECORD file" }{ XE "Files:DUPLICATE RECORD" } takes approximately 500 bytes depending on the number of tests that are used and the number of packages that are affected by the record merge.

Each entry in the DUPLICATE RESOLUTION file (#15.1){ XE "DUPLICATE RESOLUTION file" }{ XE "Files:DUPLICATE RESOLUTION" } takes approximately 28K depending on the number of tests that need to be run.

Data from the VAX/Alpha Performance monitor is stored in the ^XUCM global{ XE "Globals:^XUCM" }{ XE "^XUCM" }. This global grows at a rate of approximately 80k/day/node. A task can be queued to automatically keep this global purged. Raw data occupies most of this growth rate and can be retained a shorter period (1-3 months), while the daily averages in the CM DAILY STATISTICS file (#8986.6){ XE "CM DAILY STATISTICS file" }{ XE "Files:CM DAILY STATISTICS" } should be retained considerably longer. This ensures its usefulness for trend analysis and other computations.

Retention{ XE "Duplicate Resolution Utilities:Implementing:Retention" **}:**

The data in the Duplicate Record is not meant to be purged or archived. If one chose to they could purge the verified non-duplicates but this means that when the duplicate checking utilities are run these entries are put back in the DUPLICATE RECORD file (#15){ XE "DUPLICATE RECORD file" }{ XE "Files:DUPLICATE RECORD" } and requires somebody to verify it again.

Resource Requirements{ XE "Duplicate Resolution Utilities:Implementing:Resource Requirements" **}:**

One terminal and one printer are required. A slave printer to the terminal would be very beneficial.

Programmer Notes{ XE "Duplicate Resolution Utilities:Implementing:Programmer Notes" **}:**

Developers need to determine if the merging of two file entries affects their package in such a way that they need to have their own unique merge that deals with only their package's files.

The following conditions usually mean that a developer has to write their own unique merge:

1. The patient pointer field is defined as a numeric or free text field rather than a pointer.

2. The developer wants their end users to complete some task prior to the merge occurring.

3. They have compound cross-references that include the patient pointer on another field, but the cross-reference is not triggered by the changing of the patient pointer.

4. The Merge (Duplicate Resolution Utilities) does not do what the package developer desires.

The following is a description of what occurs during the Merge{ XE "Merge:Description" **}:**

The base file (e.g., PATIENT file, #2) is checked to see if it exists. Then the PT nodes (e.g., ^DD(2,0,"PT",) are checked and any false positives are removed. It then creates a list of files and fields within those files that point to the file being merged (e.g., in this example the file being merged is the PATIENT file, #2). If a file is pointing to the file being merged by its .01 field, and if that .01 field is DINUM, then all files/fields that point to that file are also gathered. The DINUM rule also applies to that file and any files pointing to it, to any depth.

Each file/field is checked and re-pointed/merged as follows:

If the field pointing is not a .01 field, the "from entry" is changed to the "to entry".

If the field pointing is the .01 field but not DINUM, the "from entry" is changed to the "to entry".

Each pointing .01 DINUM field is handled as follows:

If the .01 DINUM field is at the file level, ^DIT0 is called to merge the "from entry" to the "to entry" and then the "from entry" is deleted. ^DIT0 merges field by field but does not change any value in the "to entry". That means that NULL fields in the "to entry" get the value from the same field in the "from entry" if it is not NULL, and valued fields in the "to entry" remain the same. ^DIT0 also merges multiples. If a multiple entry in the "from entry" cannot be found in the "to entry", it is added to the "to entry". If a multiple entry in the "from entry" can be found in the "to entry", then that multiple entry is merged field by field.

If the .01 DINUM field is at the subfile level (in a multiple), it is handled as follows:

If there is a "from entry" but no "to entry", the "from entry" is added to the "to entry", changing the .01 field value in the process, and the "from entry" is deleted.

If there is a "from entry" and also a "to entry", the "from entry" is deleted and the "to entry" remains unchanged.

If it is determined that a developer must have their own unique merge that deals with their files, they must make the appropriate entries in the PACKAGE file (#9.4). If they have to have some sort of action taken by end users prior to the merging of the records, they must update the MERGE PACKAGES multiple in the DUPLICATE RECORD file (#15){ XE "DUPLICATE RECORD file" }{ XE "Duplicate Resolution Utilities:DUPLICATE RECORD file" } for that pair of records.

The following explains the entries that need to be made in the PACKAGE file (#9.4){ XE "PACKAGE file" }{ XE "PACKAGE file:Entries" }{ XE "Files:PACKAGE" }:

In your PACKAGE file (#9.4) make an entry in the AFFECTS RECORD MERGE field (#20).

In the .01 field, enter the file affected (e.g., PATIENT file, #2).

In the NAME OF MERGE ROUTINE field enter the name of your merge routine which is executed via indirection by Duplicate Resolution Utilities{ XE "Duplicate Resolution Utilities," }. If you leave this field blank but still place an entry in the PACKAGE file (#9.4), Duplicate Resolution Utilities assumes that you have some sort of interactive merge process that your end users must complete prior to the main merge occurring. It also assumes that this interactive merge process is on a separate option within the developer's package options. The values of the two records being merged are placed in:

 ^TMP("XDRMRGFR",$J,XDRMRG("FR"),

 and

 ^TMP("XDRMRGTO",$J,XDRMRG("TO"),

These should be referenced by the developer if they need any certain field values since the values may have been changed prior to the execution of their merge routine.

In the RECORD HAS PACKAGE DATA field you would enter a string of MUMPS executable code that is passed the variable XDRMRG("FR") (the "from record" IEN) and set XDRZ to 0. The code should set XDRZ=1 if XDRMRG("FR") has data within your package files.

Remember to only make these entries in the PACKAGE file (#9.4) if the normal merge does not suffice for your package. If you have an entry in the PACKAGE file (#9.4) the repointing and merging as described above does not take place for those files within your Package entry.

If you leave the NAME OF MERGE ROUTINE field blank, it is assumed that you have some sort of interactive merge process that must occur prior to the main merging of the two records. At the completion of your interactive merge process the developer must set the STATUS field of the MERGE PACKAGES multiple for their package in the DUPLICATE RECORD file (#15){ XE "DUPLICATE RECORD file" }{ XE "Files:DUPLICATE RECORD" } entry to Ready. This must be done using FileMan because of the trigger that is on the STATUS field. Once all of the MERGE PACKAGE entries have a STATUS of Ready, the main merging of the two records can occur.

CONFIGURATION FOR THE VAX/ALPHA PERFORMANCE MONITOR (VPM)

{ XE "Configuration for the VAX/Alpha Performance Monitor (VPM)" **}{** XE "VAX/Alpha Performance Monitor (VPM), Configuration for the" **}**VPM requires that TaskMan be set to run with a DCL context *prior* to configuring the performance monitor's site files. To configure the CM SITE PARAMETERS (#8986.095)**{** XE "CM SITE PARAMETERS file" **}{** XE "Files:CM SITE PARAMETERS" **}** and CM SITE NODENAMES (#8986.3) files**{** XE "CM SITE NODENAMES file" **}{** XE "Files:CM SITE NODENAMES" **}**, run the Setup Performance Monitor option. After editing these files, the host directory and DCL command files (XUCMVPM.COM, XUCMMONITOR.COM) are created by TaskMan. An alert is sent to you once this is complete. Re-run this option whenever CPUs are added/removed from your configuration.

Using the TaskMan option Schedule/Unschedule Options [ZTMSCHEDULE]**{** XE "Schedule/Unschedule Options [ZTMSCHEDULE]" **}** queue XUCM TASK VPM**{** XE "XUCM TASK VPM" **}** to run *hourly*. This option is the data collection driver for the VMS Monitor and checks for and loads new data into the CM DISK DRIVE RAW DATA**{** XE "CM DISK DRIVE RAW DATA" **}** (#8986.5) and CM NODENAME RAW DATA**{** XE "CM NODENAME RAW DATA" **}** (#8986.51) files. Each data collection runs for 15 minutes using 10 second sample intervals (rather than the default 3 second interval). Queue the option XUCM TASK NIT**{** XE "XUCM TASK NIT" **}** to run in the early a.m., (e.g., 0001 hours). This option compiles workday averages, mails server messages, and collects "static" information such as node and hardware types. Finally, this option files selected RTHIST data**{** XE "RTHIST data" **}** and restarts RTHIST data collections for the next 24 hours.

Routine List

This chapter contains a list of the routines exported with Toolkit. Some of the renamed routines that are put in the Manager account{ XE "Manager account" } are included. A brief description of the function or use of the routines is given.

{ XE "Routine List:XDRCNT" **}**XDRCNT

Tally records by STATUS and MERGE STATUS fields.

{ XE "Routine List:XDRDADD" **}**XDRDADD

This routine makes the entries in the DUPLICATE RECORD file (#15){ XE "DUPLICATE RECORD file" }{ XE "Files:DUPLICATE RECORD" **}**.

Called by: XDRDUP

Calls: FILE^DICN, DIE, EN^XDRMAIN

{ XE "Routine List:XDRDADJ" **}**XDRDADJ

This routine is executed by a MUMPS cross-reference{ XE "MUMPS Cross-reference" **}** on the MERGE STATUS field of the DUPLICATE RECORD file (#15){ XE "DUPLICATE RECORD file" **}{** XE "Files:DUPLICATE RECORD" **}** only when the STATUS is set to Merged. This routine checks for entries in the file that are affected by the merging of this entry, and adjusts their .01 and .02 fields accordingly. The problem being addressed is as follows:

1 to 5	If 5 to 10 merged first,	1 to 10
5 to 10	then other entries would	5 to 10
5 to 20	be adjusted as follows:	10 to 20

Or, if both 1 to 5 and 1 to 10 existed at the time of the merge, the 1 to 5 entry would be deleted.

The STATUS field (.03) is re-indexed because it sets cross-references based on the values in the .01 and .02 fields. Triggers are not fired for the .01, .02, or .03 fields.

Entries previously resolved are ignored.

Called by: Cross-reference on MERGE STATUS field of DUPLICATE RECORD file (#15){ XE "DUPLICATE RECORD file" **}{** XE "Files:DUPLICATE RECORD" **}** entry.

Calls: EN^XDRDUP, DIK

{ XE "Routine List:XDRDCOMP" **}XDRDCOMP**	This routine compares two file records via the Duplicate Checker algorithm.
	Calls: %ZIS, %ZISC, %ZTLOAD, DIC, DIR, EN^DITC, FILE^XDRDQUE, XDRDSCOR, XDRDUP
{ XE "Routine List:XDRDFPD" **}XDRDFPD**	Find all potential duplicates for an entry in a file.
{ XE "Routine List:XDRDLIST" **}XDRDLIST**	This routine is responsible for the printing of various reports from the DUPLICATE RECORD file (#15)**{** XE "DUPLICATE RECORD file" **}{** XE "Files:DUPLICATE RECORD" **}**. It prints listings of potential duplicates, ready, and not ready to merge verified duplicates.
	Calls: EN1^DIP, DIR, FILE^XDRDQUE
{ XE "Routine List:XDRDMAIN" **}XDRDMAIN**	This is the main driver for the duplicate checking routines.
	Calls: NOW^%DTC, DIE, DIK, XDRDPDTI, XDRDUP, XDREMSG, XDRMAINI
{ XE "Routine List:XDRDOC" **}XDRDOC**	Additional routine documentation.
{ XE "Routine List:XDRDOC1" **}XDRDOC1**	XDRDOC continued.
{ XE "Routine List:XDRDOC2" **}XDRDOC2**	XDRDOC continued.
{ XE "Routine List:XDRDPDTI" **}XDRDPDTI**	This routine is called by XDRDMAIN when the Potential Duplicate threshold has been raised. This routine $ORDERs through the "APOT" cross-reference on the DUPLICATE RECORD file (#15),**{** XE "DUPLICATE RECORD file" **}{** XE "Files:DUPLICATE RECORD" **}** and deletes all entries that have a DC Dupe Match Score that does not meet the Potential Duplicate Threshold value. It also updates the DC POTENTIAL DUPE THRESHOLD%. It should be noted that if a person changes the weights of the Duplicate Tests, they should delete all Potential Duplicates, Unverified and rerun the Duplicate Resolution search.
	Called by: XDRDMAIN
	Calls: DIE, DIK, EN^XDRDUP

{ XE "Routine List:XDRDPR GE" **}**XDRDPRGE	This routine enables the Duplicate Resolution manager to purge the DUPLICATE RECORD file (#15)**{** XE "DUPLICATE RECORD file" **}{** XE "Files:DUPLICATE RECORD" **}**. They may purge Potential Duplicates, Verified Non-Duplicates, or both. Verified Duplicates cannot be purged until FileMan institutes some sort of archival or merged node. Calls: %ZTLOAD, DIC, DIR, DIK
{ XE "Routine List:XDRDQU E" **}**XDRDQUE	This routine starts and stops the Duplicate Checking software when it is running in the background. If no search is running, it allows the user to queue a search to start up. If a search has been halted they may continue the search starting at the point they halted. Called by: XDRDCOMP, XDRDLIST, XDRDSCOR, XDRMADD (All these calls by above are if XDRFL is undefined) Calls: %ZTLOAD, DIC, Y^DIQ, DIR, CHECK^XDRU1, XDRCNT, XDRDFPD
{ XE "Routine List:XDRDSC OR" **}**XDRDSCOR	This routine sets the scores for the Duplicate Checking algorithm. Called by: XDRDCOMP, XDRDFPD, XDRDUP, XDRMADD, XDRMAINI Calls: FILE^XDRDQUE, XDREMSG
{ XE "Routine List:XDRDST AT" **}**XDRDSTAT	This routine displays the status of a particular search for duplicates. Calls: DIC, Y^DIQ
{ XE "Routine List:XDRDUP " **}**XDRDUP	This routine does the actual checking of two records and makes the determination if they are potential duplicates. Called by: XDRDADJ, XDRDCOMP, XDRDMAIN, XDRMADD Calls: EN^DIQ1, XDRDADD, XDRDSCOR, XDREMSG

{ XE "Routine List:XDREMSG" **}**XDREMSG	This routine is responsible for either sending error messages to the user, or if the calling routine is running in the background, it sends a bulletin to the people in the duplicate manager mail group if one is defined.

The meanings of XDRERR are as follows:

1	=	The candidate collection routine is undefined.
2	=	The candidate collection routine is not present.
3	=	The potential duplicate threshold is undefined.
4	=	There are no duplicate tests entered for this duplicate resolution entry.
5	=	The global root node in DIC is undefined.
6	=	No entry in DUPLICATE RESOLUTION file (#15.1) for this file.
7	=	The From and To records are undefined.
8	=	The test routine is not present.
9	=	The routine defined as the pre-merge routine is not present.
10	=	The routine defined as the post-merge routine is not present.
11	=	The routine defined as the verified msg routine is not present.
12	=	The routine defined as the merged msg routine is not present.
13	=	Non-interactive merge style not allowed with DINUM files for merge entries.

Called by: XDRDMAIN, XDRDSCOR, XDRDUP, XDRMAINI, XDRU1

Calls: XMB

{ XE "Routine List:XDRHLP" **}**XDRHLP	Contains code for executable help from the DUPLICATE RECORD (#15) and DUPLICATE RESOLUTION (#15.1)**{** XE "DUPLICATE RESOLUTION file" **}{** XE "Files:DUPLICATE RESOLUTION" **}** files.

{ XE "Routine List:XDRMADD" **}**XDRMADD	Adds entries to the DUPLICATE RECORD file (#15)**{** XE "DUPLICATE RECORD file" **}{** XE "Files:DUPLICATE RECORD" **}** with a status of Verified Duplicates.
	Calls: DIC, FILE^DICN, DIE, FILE^XDRDQUE, XDRDSCOR, XDRDUP, EN^XDRMAIN

{ XE "Routine List:XDRMAIN" **}**XDRMAIN	Main Driver for the merge portion of the duplicate merge utilities.
	Called by: XDRDADD, XDRMADD
	Calls: DIC, DIE, DIR, XDRMAINI, XDRMPACK, XDRMRG, XDRMSG, XDRMVFY
	EN Entry point for automatic merge.
	EN1 Entry point for looping through verified ready to merge duplicates.
	EN2 Entry point to select verified ready to merge duplicate pair.
	EN3 Entry point to select unverified potential duplicate pair.
{ XE "Routine List:XDRMAINI" **}**XDRMAINI	Initialization routine for XDRMAIN and XDRDMAIN.
	Called by: XDRDMAIN, XDRMAIN
	Calls: DIC, XDRDSCOR, XDREMSG
{ XE "Routine List:XDRMPACK" **}**XDRMPACK	This routine is responsible for checking PACKAGE file (#9.4)**{** XE "PACKAGE file" **}{** XE "Files:PACKAGE" **}** for unique package merges and for checking these package's files to see if they have data for the merged "from" record.
	Called by: XDRMAIN
	Calls: DIE
{ XE "Routine List:XDRMRG" **}**XDRMRG	This is the routine that does the actual merging of the duplicate records.
	Called by: XDRMAIN
	Calls: DIE, DIK, EN^DIT0, DITM2, EN^DITMGMRG, LOCK^XDRU1
{ XE "Routine List:XDRMRG1" **}**XDRMRG1	This routine is the error trap for XDRMRG.
	Calls: %ET, DIE

{ XE "Routine List:XDRMSG " }XDRMSG	This routine is responsible for the sending of the verified and merged messages.
	Called by: XDRMAIN
	Calls: XMB
{ XE "Routine List:XDRMVF Y" }XDRMVFY	This routine is responsible for verifying potential duplicates.
	Called by: XDRMAIN
	Calls: DIE, DIR, EN^DITC
{ XE "Routine List:XDRPREI " }XDRPREI	This is a pre-init routine for the XDR package that deletes the DUPLICATE RECORD (#15){ XE "DUPLICATE RECORD file" }{ XE "Files:DUPLICATE RECORD" } and DUPLICATE RESOLUTION (#15.1){ XE "DUPLICATE RESOLUTION file" }{ XE "Files:DUPLICATE RESOLUTION" } files' dictionaries.
{ XE "Routine List:XDRU1" }XDRU	This routine is a utility routine for the merge software; it does some testing for the merge software and provides the locking subroutines for the merge.
	Called by: XDRDQUE, XDRMRG
	Calls: XDREMSG
{ XE "Routine List:XINDEX" }XINDEX	The XIND* series of routines is the VA Cross-referencer. These routines are saved in the Manager's account as %IND* routines.
{ XE "Routine List:XINDX1" }XINDX1	%INDEX continued.
{ XE "Routine List:XINDX2" }XINDX2	%INDEX continued.
{ XE "Routine List:XINDX3" }XINDX3	%INDEX continued.
{ XE "Routine List:XINDX4" }XINDX4	%INDEX continued.
{ XE "Routine List:XINDX5" }XINDX5	%INDEX continued.
{ XE "Routine List:XINDX6" }XINDX6	%INDEX continued.

{ XE "Routine List:XINDX7" **}**XINDX7	%INDEX continued.
{ XE "Routine List:XINDX8" **}**XINDX8	%INDEX continued.
{ XE "Routine List:XINDX9" **}**XINDX9	%INDEX continued.
{ XE "Routine List:XINDX10 " **}**XINDX10	%INDEX continued.
{ XE "Routine List:XINDX11 " **}**XINDX11	%INDEX continued.
{ XE "Routine List:XINDX51 " **}**XINDX51	%INDEX continued.
{ XE "Routine List:XINDX52 " **}**XINDX52	%INDEX continued.
{ XE "Routine List:XINDX53 " **}**XINDX53	%INDEX continued.
{ XE "Routine List:XPDKEY " **}**XPDKEY	This routine provides a library of extrinsic MUMPS functions for security keys.
{ XE "Routine List:XTBASE" **}**XTBASE	This routine is used in the [XT-NUMBER BASE CHANGER] option**{** XE "XT-NUMBER BASE CHANGER" **}** to calculate the base of a number and output the result.
{ XE "Routine List:XTCMFI LN" **}**XTCMFILN	Move Host file to mail message.
{ XE "Routine List:XTEDTV XD" **}**XTEDTVXD	This routine works with entries in the ALTERNATE EDITOR file (#1.2)**{** XE "ALTERNATE EDITOR file" **}{** XE "Files:ALTERNATE EDITOR" **}** to allow use of the VAX-VMS EDT and TPU editors.
{ XE "Routine List:XTFC0" **}**XTFC0	Flow chart generator.
{ XE "Routine List:XTFC1" **}**XTFC1	Flow chart generator.
{ XE "Routine List:XTFCE" **}**XTFCE	This routine is used in the [XTFCE] option**{** XE "XTFCE" **}** to display a flow chart of a routine from a given entry point.

{ XE "Routine List:XTFCE1" **}XTFCE1**	Display flow charts by entry points.
{ XE "Routine List:XTFCR" **}XTFCR**	This routine is used in the [XTFCR] option**{** XE "XTFCR" **}** to produce a flow chart of an entire routine.
{ XE "Routine List:XTFCR1" **}XTFCR1**	Display flowchart.
{ XE "Routine List:XTINEND" **}XTINEND**	Post-init
{ XE "Routine List:XTINOK" **}XTINOK**	Environment check of Init.
{ XE "Routine List:XTKERM1" **}XTKERM1**	Send a file using the Kermit protocol.
{ XE "Routine List:XTKERM2" **}XTKERM2**	Receive a file using the Kermit protocol.
{ XE "Routine List:XTKERM3" **}XTKERM3**	Kermit protocol send/receive.
{ XE "Routine List:XTKERM4" **}XTKERM4**	Utility parts of the Kermit protocol.
{ XE "Routine List:XTKERMIT" **}XTKERMIT**	This routine is used in the [XT-KERMIT RECEIVE] option**{** XE "XT-KERMIT RECEIVE" **}** and in the [XT-KERMIT SEND] option**{** XE "XT-KERMIT SEND" **}** to receive and send files using the Kermit protocol.
{ XE "Routine List:XTLATSET" **}XTLATSET**	This routine is used in the [XTLATSET] option**{** XE "XTLATSET" **}** to build VMS command files to coordinate the Kernel and VMS device tables. It reads from the Kernel's DEVICE file (#3.5)**{** XE "DEVICE file" **}{** XE "Files:DEVICE" **}** for _LTA devices and writes three VMS command files. The first file, LT_LOAD.COM**{** XE "LT_LOAD.COM" **}**, sets up printers in LATCP. The second, LT_PRT.DAT**{** XE "LT_PRT.DAT" **}**, is read by SYSPRINT.COM**{** XE "SYSPRINT.COM" **}** to set VMS parameters for printers and other devices and can optionally set up VMS spooling. The third, TSC_LOAD.COM**{** XE "TSC_LOAD.COM" **}**, establishes printer parameters to be used in the DEC server's device tables.
{ XE "Routine List:XTLKDICL" **}XTLKDICL**	This is the "special look-up" routine called from the DIC node of the file using MTLU.

{ XE "Routine List:XTLKEFOP" **}**XTLKEFOP	This routine contains the logic for editing keywords, shortcuts, and synonyms. It also contains the logic to kill and set Local Look-up Data Dictionaries.
{ XE "Routine List:XTLKKSCH" **}**XTLKKSCH	Processes user input and initiates the search.
{ XE "Routine List:XTLKKWL" **}**XTLKKWL	These routines contain the logic that is the actual engine of the package.
{ XE "Routine List:XTLKKWL1" **}**XTLKKWL1	These routines contain the logic that is the actual engine of the package.
{ XE "Routine List:XTLKKWL2" **}**XTLKKWL2	These routines contain the logic that is the actual engine of the package.
{ XE "Routine List:XTLKKWLD" **}**XTLKKWLD	These routines contain the logic that is the actual engine of the package.
{ XE "Routine List:XTLKMGR" **}**XTLKMGR	Procedure calls for developers using MTLU.
{ XE "Routine List:XTLKPRT" **}**XTLKPRT	This routine prints the LOCAL KEYWORD (#8984.1)**{** XE "LOCAL KEYWORD file" **}{** XE "Files:LOCAL KEYWORD" **}**, LOCAL SHORTCUT (#8984.2)**{** XE "LOCAL SHORTCUT file" **}{** XE "Files:LOCAL SHORTCUT" **}**, and LOCAL SYNONYM (#8984.3)**{** XE "LOCAL SYNONYM file" **}{** XE "Files:LOCAL SYNONYM" **}** files.
{ XE "Routine List:XTLKPST" **}**XTLKPST	This is the postinit routine to set up the LOCAL LOOKUP file (#8984.4)**{** XE "LOCAL LOOKUP file" **}{** XE "Files:LOCAL LOOKUP" **}**.
{ XE "Routine List:XTLKTICD" **}**XTLKTICD	This routine is used to test the look-up option.
{ XE "Routine List:XTLKTOKN" **}**XTLKTOKN	Converts the user's input line to tokens.
{ XE "Routine List:XTLKWIC" **}**XTLKWIC	This routine is used to set and kill the cross-references from the description fields.

{ XE "Routine List:XTNTEG " **}**XTNTEG	Routines containing exported checksum values. Call ^XTNT to determine what's changed since package installation.
{ XE "Routine List:XTNTEG 0" **}**XTNTEG0	XTNTEG continued.
{ XE "Routine List:XTNTEG 1" **}**XTNTEG1	XTNTEG continued.
{ XE "Routine List:XTRCMP " **}**XTRCMP	This routine is used in the [XT-ROUTINE COMPARE] option**{** XE "XT-ROUTINE COMPARE" **}** to compare two routines of different names in the current account and list the differences.
{ XE "Routine List:XTRGRP E" **}**XTRGRPE	This routine provides editing of a group of routines with the %Z editor.
{ XE "Routine List:XTRTHV" **}**XTRTHV	Produces a useful RTHIST summary.
{ XE "Routine List:XTSPING " **}**XTSPING	This routine is part of a Server option that takes any message sent to it and sends it back to the sender. This shows that servers are working at a site.
{ XE "Routine List:XTSUMB LD" **}**XTSUMBLD	This routine builds an integrity checker of the form <namespace>NTEG. It gets the namespace from the PACKAGE file (#9.4)**{** XE "PACKAGE file" **}{** XE "Files:PACKAGE" **}**. It then asks for a list of routines to include. There is an entry point CHECK that calculates the current checksum and displays it for selected routines. When the <namespace>NTEG routine runs, it loads the routines and recalculates the checksum, then compares it to its internal checksum. It reports "OK" if there is a match, or reports the current value if there is a difference. The ASCII value of the routine is determined as follows:

1) Any comment line with a single semicolon is presumed to be followed by comments and only the line tag is included.

2) Line 2 is excluded from the count.

3) The total ASCII value of the routine is determined by taking, excluding the exceptions noted above, and multiplying the ASCII value of each character by its position on the line being checked.

{ XE "Routine List:XTVCHG " **}**XTVCHG	This routine is used in the [XT-VARIABLE CHANGER] option**{** XE "XT-VARIABLE CHANGER" **}** to change all occurrences of a variable to another.

{ XE "Routine List:XTVGC1" **}**XTVGC1	This routine is used by the [XTVG COMPARE] option**{** XE "XTVG COMPARE" **}** to enter data on the global structure associated with a package into the XTV GLOBAL CHANGES file (#8991.2)**{** XE "XTV GLOBAL CHANGES file" **}{** XE "Files:XTV GLOBAL CHANGES" **}**.
{ XE "Routine List:XTVGC1 A" **}**XTVGC1A	XTVGC1 continued.
{ XE "Routine List:XTVGC2" **}**XTVGC2	This routine is used by the [XTVG COMPARE] option**{** XE "XTVG COMPARE" **}** to generate a list of current global entries which differ from those previously entered into the XTV GLOBAL CHANGES file (#8991.2)**{** XE "XTV GLOBAL CHANGES file" **}{** XE "Files:XTV GLOBAL CHANGES" **}**. The globals may differ by deletion, insertion, or by a change in content.
{ XE "Routine List:XTVGC2 A" **}**XTVGC2A	XTVGC2 continued.
{ XE "Routine List:XTVGC2 A1" **}**XTVGC2A1	XTVGC2 continued.
{ XE "Routine List:XTVNUM " **}**XTVNUM	This routine is used in the [XT-VERSION NUMBER] option**{** XE "XT-VERSION NUMBER" **}** to create or update the version number of a set of routines.
{ XE "Routine List:XTVRC1" **}**XTVRC1	This routine is used by the [XTVR UPDATE] option**{** XE "XTVR UPDATE" **}** to enter selected routine(s) into the XTV ROUTINE CHANGES file (#8991),**{** XE "XTV ROUTINE CHANGES file" **}{** XE "Files:XTV ROUTINE CHANGES" **}** or to determine whether any changes have occurred since the file was last updated. The most current version of the routine is maintained along with sufficient information about any changes to permit a detailed listing of changes in the routine.
{ XE "Routine List:XTVRC1 A" **}**XTVRC1A	This routine is used by the [XTVR MOST RECENT CHANGE DATE] option**{** XE "XTVR MOST RECENT CHANGE DATE" **}**. It searches the XTV ROUTINE CHANGES file (#8991)**{** XE "XTV ROUTINE CHANGES file" **}{** XE "Files:XTV ROUTINE CHANGES" **}** for the most recent updating date on which a change was logged into the file.
{ XE "Routine List:XTVRC1Z " **}**XTVRC1Z	This routine is called automatically when .F is entered in the %Z editor, and calls XTVRC1 to log the changes in the routine.

{ XE "Routine List:XTVRC2" **}**XTVRC2	This routine is used by the [XTVR COMPARE] option**{** XE "XTVR COMPARE" **}**, and generates a list of the changes to the program as they have been monitored by the [XTVR UPDATE] option**{** XE "XTVR UPDATE" **}**. The changes are listed from most recent back through the number of change dates requested.
{ XE "Routine List:XTVRCRES" **}**XTVRCRES	Restores a routine back to an older version.
{ XE "Routine List:XUCMBR1" **}**XUCMBR1	Bernstein Response Time reports/graphs.
{ XE "Routine List:XUCMBR2" **}**XUCMBR2	XUCMBR1 continued.
{ XE "Routine List:XUCMBR3" **}**XUCMBR3	XUCMBR1 continued.
{ XE "Routine List:XUCMBRTL" **}**XUCMBRTL	Server that loads the Bernstein Response Time Log (BRTL) data.
{ XE "Routine List:XUCMDSL" **}**XUCMDSL	For use by ISCs wishing to file VMS performance data from their sites.
{ XE "Routine List:XUCMFGI" **}**XUCMFGI	Driver for installation of Filegrams and servers.
{ XE "Routine List:XUCMFIL" **}**XUCMFIL	File data collected from VMS Monitor.
{ XE "Routine List:XUCMGRAF" **}**XUCMGRAF	Used by graph options for scaling, generating footers.
{ XE "Routine List:XUCMNIT" **}**XUCMNIT	Processes raw data, generating morning report and mail server message.
{ XE "Routine List:XUCMNIT1" **}**XUCMNIT1	XUCMNIT continued.
{ XE "Routine List:XUCMNIT2" **}**XUCMNIT2	XUCMNIT continued.

{ XE "Routine List:XUCMNI 2A" **}**XUCMNI2A	XUCMNIT continued.
{ XE "Routine List:XUCMNI T3" **}**XUCMNIT3	XUCMNIT continued.
{ XE "Routine List:XUCMNT 3A" **}**XUCMNT3A	XUCMNIT continued.
{ XE "Routine List:XUCMNI T4" **}**XUCMNIT4	XUCMNIT continued.
{ XE "Routine List:XUCMNI T5" **}**XUCMNIT5	XUCMNIT continued.
{ XE "Routine List:XUCMPA " **}**XUCMPA	Performance assurance; compute reference ranges.
{ XE "Routine List:XUCMPA 1" **}**XUCMPA1	XUCMPA continued.
{ XE "Routine List:XUCMPA 2" **}**XUCMPA2	Performance assessments
{ XE "Routine List:XUCMPA 2A" **}**XUCMPA2A	XUCMPA2 continued.
{ XE "Routine List:XUCMPA 2B" **}**XUCMPA2B	XUCMPA2 continued.
{ XE "Routine List:XUCMPO ST" **}**XUCMPOST	Post-init allows the site to review settings, configure the VAX/Alpha Performance Monitor (VPM)
{ XE "Routine List:XUCMPR E" **}**XUCMPRE	Pre-init used to move old VPM data to global nodes that match current file numbers.
{ XE "Routine List:XUCMT M" **}**XUCMTM	Assist with configuring TaskMan to run from DCL.

{ XE "Routine List:XUCMTM1" **}**XUCMTM1	XUCMTM continued.
{ XE "Routine List:XUCMVPG" **}**XUCMVPG	Disk Drive graphs.
{ XE "Routine List:XUCMVPG1" **}**XUCMVPG1	Performance Metric graphs.
{ XE "Routine List:XUCMVPI" **}**XUCMVPI	Installs VPM directory and COM files.
{ XE "Routine List:XUCMVPM" **}**XUCMVPM	Driver for raw data collection.
{ XE "Routine List:XUCMVPM1" **}**XUCMVPM1	XUCMVPM continued; files VMS Monitor data on VMS systems.
{ XE "Routine List:XUCMVPS" **}**XUCMVPS	More disk drive reports.
{ XE "Routine List:XUCMVPU" **}**XUCMVPU	Miscellaneous VPM functions and procedures.
{ XE "Routine List:XUCPCLCT" **}**XUCPCLCT	This routine allows the user to schedule the starting and stopping times for data collection.
{ XE "Routine List:XUCPFRMT" **}**XUCPFRMT	This routine is used to output the sorted data in Table or Graph format.
{ XE "Routine List:XUCPRAW" **}**XUCPRAW	This routine is invoked to sort, print, or kill raw data.
{ XE "Routine List:XUCS1E" **}**XUCS1E	Called by XUCSTME to update the Routine/Global Accesses multiple (8987.32).
{ XE "Routine List:XUCS1R" **}**XUCS1R	Contains the front end driver for the Routine/Global access report; sorted by Volume Group, within Volume Group by Date. It also contains the sort logic.

{ XE "Routine List:XUCS1R A" }XUCS1RA	Prints the data sorted by XUCS1R.
{ XE "Routine List:XUCS1R B" }XUCS1RB	Contains the front end driver for the Routine/Global access report; sorted by Date, within Date by Volume Group. It also contains the sort logic.
{ XE "Routine List:XUCS1R BA" }XUCS1RBA	Prints the date sorted by XUCS1RB.
{ XE "Routine List:XUCS2E" }XUCS2E	Called by XUCSTME to update the Global References multiple (8987.33).
{ XE "Routine List:XUCS2R" }XUCS2R	Contains the front end driver for the Global References report; sorted by Volume Group, within Volume Group by Date. It also contains the sort logic.
{ XE "Routine List:XUCS2R A" }XUCS2RA	Prints the data sorted by XUCS2R.
{ XE "Routine List:XUCS2R B" }XUCS2RB	Contains the front end driver for the Global References report; sorted by Date, within Date by Volume Group. It also contains the sort logic.
{ XE "Routine List:XUCS2R BA" }XUCS2RBA	Prints the data sorted by XUCS2RB.
{ XE "Routine List:XUCS4E" }XUCS4E	Called by XUCSTME to update the Raw Statistics multiple (8987.34).
{ XE "Routine List:XUCS4R" }XUCS4R	Contains the front end driver for the Raw Statistics report; sorted by Volume Group, within Volume Group by Date. It also contains the sort and print logic.
{ XE "Routine List:XUCS4R B" }XUCS4RB	Contains the front end driver for the Raw Statistics report; sorted by Date, within Date by Volume Group. It also contains the sort and print logic.
{ XE "Routine List:XUCS5E" }XUCS5E	Not used in the current version. For the future.
{ XE "Routine List:XUCS5E A" }XUCS5EA	Not used in the current version. For the future.
{ XE "Routine List:XUCS6E" }XUCS6E	Called by XUCSTME to update the System Configuration Parameters (field #2, SYSTEM CONFIG PARMS).

{ XE "Routine List:XUCS6R" **}**XUCS6R	Prints the System Configuration Parameters.
{ XE "Routine List:XUCS8E" **}**XUCS8E	Called by XUCSTME to update the Response Time multiple (8987.36).
{ XE "Routine List:XUCS8R" **}**XUCS8R	Contains the front end driver for the Response Time report; sorted by Volume Group, within Volume Group by Date. It also contains the sort and print logic.
{ XE "Routine List:XUCS8R B" **}**XUCS8RB	Contains the front end driver for the Response Time report; sorted by Date, within Date by Volume Group. It also contains the sort and print logic.
{ XE "Routine List:XUCS8R G" **}**XUCS8RG	Contains the front end driver for the Response Time graph report; sorted by Volume Group, within Volume Group by Date. It also contains the sort logic.
{ XE "Routine List:XUCS8R GA" **}**XUCS8RGA	Prints a graph of the data sorted by XUCS8RG.
{ XE "Routine List:XUCSCD E" **}**XUCSCDE	Called by XUCSTME to update the CPU/Disk Utilization multiple (8987.37).
{ XE "Routine List:XUCSCD G" **}**XUCSCDG	Contains the front end driver for the CPU/Disk Utilization graph report; sorted by Volume Group, within Volume Group by Date. It also contains the sort logic.
{ XE "Routine List:XUCSCD GA" **}**XUCSCDGA	Prints a graph of the data sorted by XUCSCDG.
{ XE "Routine List:XUCSCD R" **}**XUCSCDR	Contains the front end driver for the CPU/Disk Utilization report; sorted by Volume Group, within Volume Group by Date. It also contains the sort and print logic.
{ XE "Routine List:XUCSCD RB" **}**XUCSCDRB	Contains the front end driver for the CPU/Disk Utilization report; sorted by Date, within Date by Volume Group. It also contains the sort and print logic.
{ XE "Routine List:XUCSLO AD" **}**XUCSLOAD	FOR ISC USE. This is the server routine used to file incoming performance data from 486 sites if requested by the ISC.
{ XE "Routine List:XUCSPR G" **}**XUCSPRG	Purges, based upon a site parameter, any data in file 8987.2. It has both a manual entry point and queueable entry point.

{ XE "Routine List:XUCSRV" }XUCSRV	This routine loads performance data from 486 sites into a mail message and ships it to the Capacity Management Directorate.
{ XE "Routine List:XUCSTM " }XUCSTM	Has two queueable entry points for the AM MSM-RTHIST and the PM MSM-RTHIST. It then in turn spawns MSM-RTHIST to nodes defined in File #8987.1 via Task Manager.
{ XE "Routine List:XUCSTM E" }XUCSTME	This routine is used to transfer data from each nodes where MSM-RTHIST was run to the %ZRTL("XUCS",... When all of the data has been transferred it then updates File 8987.2.
{ XE "Routine List:XUCSUT L" }XUCSUTL	Common sub-routine that is used throughout the XUCS* package.
{ XE "Routine List:XUCSUT L2" }XUCSUTL2	Common sub-routine that is used throughout the XUCS* package.
{ XE "Routine List:XUCSUT L3" }XUCSUTL3	Common sub-routine that is used throughout the XUCS* package.
{ XE "Routine List:XURTL" }XURTL	Prints system response time hourly averages from raw data.
{ XE "Routine List:XURTL1" }XURTL1	Prints system response time bar graph of hourly averages over a selected range of dates.
{ XE "Routine List:XURTL2" }XURTL2	Prints system response time hourly averages for several days.
{ XE "Routine List:XURTL3" }XURTL3	Prints VAX DSM system response time bar graph of hourly averages over a selected range of dates, including CPU and DID usage.
{ XE "Routine List:XURTLC" }XURTLC	Copies raw Response Time (RT) data into a FileMan (FM) file. It uses a significant amount of space in the MGR account.
{ XE "Routine List:XURTLK " }XURTLK	Kills raw RT data; saves means in FM file.
{ XE "Routine List:ZINDEX" }ZINDEX	The ZIND* series of routines is the VA Cross-referencer. These routines are saved in the Manager's account as %IND* routines.
{ XE "Routine List:ZINDX1" }ZINDX1	%INDEX continued.
{ XE "Routine List:ZINDX2" }ZINDX2	%INDEX continued.

{ XE "Routine List:ZINDX3" **}**ZINDX3	%INDEX continued.
{ XE "Routine List:ZINDX4" **}**ZINDX4	%INDEX continued.
{ XE "Routine List:ZINDX5" **}**ZINDX5	%INDEX continued.
{ XE "Routine List:ZINDX6" **}**ZINDX6	%INDEX continued.
{ XE "Routine List:ZINDX8" **}**ZINDX8	%INDEX continued.
{ XE "Routine List:ZINDX9" **}**ZINDX9	%INDEX continued.
{ XE "Routine List:ZINDX10" **}**ZINDX10	%INDEX continued.
{ XE "Routine List:ZINDX11" **}**ZINDX11	%INDEX continued.
{ XE "Routine List:ZINDX51" **}**ZINDX51	%INDEX continued.
{ XE "Routine List:ZINDX52" **}**ZINDX52	%INDEX continued.
{ XE "Routine List:ZINDX53" **}**ZINDX53	%INDEX continued.
{ XE "Routine List:ZINDXH" **}**ZINDXH	%INDEX continued.
{ XE "Routine List:ZOSV2MSM" **}**ZOSV2MSM	This routine is saved in the MGR account of each node defined in File 8987.1 as %ZOSV2. It has two main parts: the first is the necessary logic to start MSM's RTHIST silently, the second part is the transfer logic used to get the RTHIST data from the ^RTHIST global for each node to the %ZRTL("XUCS",... nodes.
{ XE "Routine List:ZTEDIT" **}**ZTEDIT	This series of routines creates the generic VA routine editor as ^%Z.
{ XE "Routine List:ZTEDIT1" **}**ZTEDIT1	%Z editor - edit single lines.

{ XE "Routine List:ZTEDIT2 " **}**ZTEDIT2	%Z editor continued.
{ XE "Routine List:ZTEDIT3 " **}**ZTEDIT3	%Z editor - transfer lines from one place to another.
{ XE "Routine List:ZTEDIT4 " **}**ZTEDIT4	%Z editor - help messages.
{ XE "Routine List:ZTGS" **}**ZTGS	Global search.
{ XE "Routine List:ZTMGRS ET" **}**ZTMGRSET	Set up the Manager account for the System.
{ XE "Routine List:ZTP1" **}**ZTP1	This routine is called with D ^%ZTP1**{** XE "Direct Mode Utilities:>D ^%ZTP1" **}** to output the first and optionally second lines of routines from the current account to an output device in alphabetical, size, or date order.
{ XE "Routine List:ZTPP" **}**ZTPP	This routine is called with D ^%ZTPP**{** XE "Direct Mode Utilities:>D ^%ZTPP" **}** to produce a compressed routine print to an output device.
{ XE "Routine List:ZTRDEL" **}**ZTRDEL	This routine may be called with D ^%ZTRDEL**{** XE "Direct Mode Utilities:>D ^%ZTRDEL" **}** to specify a range of routines to delete from the current directory.
{ XE "Routine List:ZTRTHV" **}**ZTRTHV	This routine produces response time summary output. (VAX DSM).

File List

This chapter lists all the Toolkit files numerically by file number, indicates their global location, and gives a description for each file.**{** XE "Global Location:Toolkit Files" **}{** XE "Toolkit Files" **}**

3.091 RESPONSE TIME**{** XE "Files:RESPONSE TIME" **}{** XE "RESPONSE TIME file" **}**   Global Location: ^%ZRTL(1,

This file (which points to the RT DATE_UCI,VOL file) contains system response time averages by date, UCI and VOL, hour of day, and routine for those routines/response times which have been selected for monitoring. Data is inserted in this file by the routine XURTLK**{** XE "XURTLK" **}**, which condenses and then purges the raw Response Time (RT) data.

3.092 RT DATE_UCI,VOL**{** XE "Files:RT DATE_UCI,VOL" **}{** XE "RT DATE_UCI,VOL file" **}**   Global Location: ^%ZRTL(2,

This file (which is pointed to by the RESPONSE TIME file) contains unique entries for each DATE_UCI,VOL combination, as well as hourly active job averages if active job data is available. It is created by the XURTLK**{** XE "XURTLK" **}** routine, which condenses and purges raw Response Time (RT) data.

3.094 RT RAWDATA**{** XE "Files:RT RAWDATA" **}{** XE "RT RAWDATA file" **}**
                                                                Global Location: ^%ZRTL(4,

This file exists to permit the optional storage of raw response time data in VA FileMan format. The data transfer is performed by the XURTLC routine**{** XE "XURTLC" **}**. Running that routine can be expected to triple the size of the %ZRTL global in the MGR account. A Response Time (RT) option exists to kill the file when it is no longer required.

15 DUPLICATE RECORD**{** XE "Files:DUPLICATE RECORD" **}{** XE "DUPLICATE RECORD file" **}**   Global Location: ^VA(15,

This file is designed to analyze and resolve duplicate record problems from various data files (e.g., PATIENT file, #2). The "from" and "to" records are identified, the match status is reported, and the user initiating the process is noted. This file is cross-referenced by status and from-record.

15.1 DUPLICATE RESOLUTION{ XE "Files:DUPLICATE RESOLUTION" }{ XE
"DUPLICATE RESOLUTION file" }   Global Location: ^VA(15.1,

This file is used by Toolkit to facilitate duplicate checking and merging of files that
have entries in the DUPLICATE RECORD file (#15). It provides the overall control
information that package developers need to identify duplicates within their files
and then to merge the duplicate entries.

8980 KERMIT HOLDING{ XE "Files:KERMIT HOLDING" }{ XE "KERMIT
HOLDING file" }   Global Location: ^DIZ(8980,

This file provides a holding place for data being transferred by the Kermit protocol.
By default the data can only be accessed by the user who created it. The Kermit
Menu [XT-KERMIT MENU]{ XE "XT-KERMIT MENU" } options may be used to
send and receive data via this file. The menu also allows the creator of the data to
permit access by others. This file is cross-referenced by name, creator, and access
allowed to user.

8984.1 LOCAL KEYWORD{ XE "Files:LOCAL KEYWORD" }{ XE "LOCAL
KEYWORD file" }   Global Location: ^XT(8984.1,

The look-up entry (or code) can be associated with multiple key words or key
phrases. The entry is displayed if the user enters all or any part of a key phrase.
See an example below:

KEYPHRASE: LOOKUP FILE:

SALT AND PEPPER   NAME: JOHN   HAIR COLOR: LIGHT BROWN
SORT OF GRAY   JACK   PRETTY GRAY
SCHNAUZER   JILL   GEORGIA CLAY
                       MARY   SORT OF GRAY
                       JIM   BLACK AND WHITE

HAIR COLOR has an MTLU cross-reference.

Each of the key phrases above are associated with the entry JIM. Users can enter the following combinations:

·   SALT, SALT AND PEPPER, SALT & PEPPER, PEPPER, SORT OF PEPPER, SCHNAUZER returns only JIM. Note that SORT OF PEPPER returns only JIM because the tokens SORT and PEPPER must both be true for a match. PEPPER is false for MARY.

·   SORT, SORT OF GRAY returns MARY and JIM

·   GRAY returns MARY, JIM, and JACK

NOTE: Look-ups are performed in the following order:

        1. SHORTCUT   <-- stops here if a match is found
        2. SYNONYM
        3. KEYWORD

8984.2 LOCAL SHORTCUT**{** XE "Files:LOCAL SHORTCUT" **}{** XE "LOCAL SHORTCUT file" **}**   Global Location: ^XT(8984.2,

This is a word or phrase which is used *exclusively* to find an entry. During a look-up this file is checked first. If a shortcut matches the user's entry, the corresponding entry is displayed and no other look-ups are performed.

8984.3 LOCAL SYNONYM**{** XE "Files:LOCAL SYNONYM" **}{** XE "LOCAL SYNONYM file" **}**   Global Location: ^XT(8984.3,

Synonyms are single terms that can be associated with one or more terms in the look-up file (tokens in the MTLU cross-reference). For example, CANCER can be associated with each of the specific forms of cancer that might be found. Note that if the user enters a phrase, all terms in the phrase must be true to get a match; therefore, LUNG CANCER might significantly restrict the search.

8984.4 LOCAL LOOKUP**{** XE "Files:LOCAL LOOKUP" **}{** XE "LOCAL LOOKUP
file" **}**   Global Location: ^XT(8984.4,

Files that have been configured for multi-term look-ups must be defined here, along
with the name of the file's MTLU cross-reference.

8986.095 .CM SITE PARAMETERSi.Files:CM SITE PARAMETERS;**{** XE "CM
SITE PARAMETERS file" **}**   Global Location: ^XUCM(8986.095,

Holds parameters for the VAX/Alpha Performance Monitor drivers as well as a
basic site profile. Data collection is disabled/enabled through this file.

8986.098 CM BERNSTEIN DATA**{** XE "Files:CM BERNSTEIN DATA" **}{** XE "CM
BERNSTEIN DATA file" **}**   Global Location: ^XUCM(8986.098,

All data for this file is collected by the Bernstein Response Time Monitor at the
sites. The data is pre-formatted using the VMS COM file FORMAT.COM, then
mailed to the server S.XUCM SERVER and to the groups defined in the CM SITE
PARAMETERS file (#8986.095).

8986.3 CM SITE NODENAMES**{** XE "Files:CM SITE NODENAMES" **}{** XE "CM
SITE NODENAMES file" **}**   Global Location: ^XUCM(8986.3,

This file contains all nodenames that are monitored. Enter the name of all nodes
used to support DHCP. Information for the remaining fields is collected
automatically.

8986.35 CM SITE DISKDRIVES**{** XE "Files:CM SITE DISKDRIVES" **}{** XE "CM
SITE DISKDRIVES file" **}**   Global Location: ^XUCM(8986.35,

All data for this file is collected automatically and should not be edited.

8986.4 CM METRICS**{** XE "Files:CM METRICS" **}{** XE "CM METRICS file" **}**
                                                Global Location: ^XUCM(8986.4,

This file defines the data elements and associated benchmarks that should be
applied to a particular hardware type. Sites should *not* modify this file. File updates
are distributed via FileMan Filegram as the need arises.

8986.5 CM DISK DRIVE RAW DATA**{** XE "Files:CM DISK DRIVE RAW DATA" **}{** XE "CM DISK DRIVE RAW DATA file" **}**   Global Location: ^XUCM(8986.5,

This file contains node-specific data from the VMS Monitor utility consisting of hourly collections of IO and QUEUE LENGTH.

8986.51 CM NODENAME RAW DATA**{** XE "Files:CM NODENAME RAW DATA" **}{** XE "CM NODENAME RAW DATA file" **}**   Global Location: ^XUCM(8986.51,

This file contains node-specific data from the VMS Monitor utility related to CPU and memory utilization.

8986.6 CM DAILY STATISTICS**{** XE "Files:CM DAILY STATISTICS" **}{** XE "CM DAILY STATISTICS file" **}**   Global Location: ^XUCM(8986.6,

This file is updated each evening with the average based on the raw data from the previous "workday", 8 a.m. to 4:30 p.m. It is used for generation of summary reports and server messages. Data from this file can be retained considerably longer than the raw data files, and should be most useful for trend analysis.

8991 XTV ROUTINE CHANGES**{** XE "Files:XTV ROUTINE CHANGES" **}{** XE "XTV ROUTINE CHANGES file" **}**   Global Location: ^XTV(8991,

This file is used to record the most current version of a routine and information about changes which have occurred in that routine in prior versions. Routines are checked for any changes by using the [XTVR UPDATE] option**{** XE "XTVR UPDATE" **}** which enters any changes noted and updates the most current version. There is no need for manual entry into this file.

The [XTVR COMPARE] option**{** XE "XTVR COMPARE" **}** is used to obtain listings of the changes recorded for the routine(s) from the most recent to earlier changes.

8991.19 XTV VERIFICATION PACKAGE**{** XE "Files:XTV VERIFICATION PACKAGE" **}{** XE "XTV VERIFICATION PACKAGE file" **}**   Global Location: ^XTV(8991.19,

This file is used to indicate the file numbers for the main files, and namespaces for options, keys, etc., that are to be included as a part of a package undergoing verification. This file is used to determine the files and other entries to be included by the routines used in preparing and comparing the XTV GLOBAL CHANGES file (#8991.2).

8991.2 XTV GLOBAL CHANGES{ XE "Files:XTV GLOBAL CHANGES" }{ XE "XTV GLOBAL CHANGES file" }   Global Location: ^XTV(8991.2,

This file is used to record the state of a given verification package in terms of Data Dictionary (DD) entries, options, keys, templates, etc., for comparison with a subsequent version of the package.

Exported Options (Menu Structure)

This chapter contains Toolkit's exported menu structure{ XE "Exported Options (Menu Structure)" }. The options with any associated synonyms and their positions on the menus are shown. Following each option is any associated locks to that option.

TOOLKIT MENU TREE ROOTS

Toolkit exports the following menu trees:

- Programmer Options [XUPROG]{ XE "Menu Tree Roots:Programmer Options [XUPROG]" }{ XE "Programmer Options [XUPROG]" }

    This menu provides tools for developers and verifiers to use in writing, testing, and analysis of code.

- Capacity Management [XTCM MAIN]{ XE "Menu Tree Roots:Capacity Management [XTCM MAIN]" }{ XE "Capacity Management [XTCM MAIN]" }

    This menu integrates all capacity management activities into one package at the site level.

    These tools permit the monitoring of VAX/Alpha and 486 configurations for performance, response time, and resource utilization.

- Application Utilities [XTMENU]{ XE "Menu Tree Roots:Application Utilities [XTMENU]" }{ XE "Application Utilities [XTMENU]" }

    This menu contains application programming tools which provide Duplicate Resolution Utilities{ XE "Duplicate Resolution Utilities," } and increase the accessibility of medical information.

    Duplicate Resolution Utilities provide the functionality of combining duplicate records based on conditions established in customized applications.

    Multi-Term Look-Up provides a method of enhancing the look-up capabilities of associated FileMan files by permitting the use of query-like phrases.

- Toolkit Queuable Options [XTQUEUABLE OPTIONS]**{** XE "Menu Tree Roots:Toolkit Queuable Options [XTQUEUABLE OPTIONS]" **}{** XE "Toolkit Queuable Options [XTQUEUABLE OPTIONS]" **}**

  This menu, which has no parent, collects together all of the parentless Toolkit options that are intended to be scheduled through the TaskMan option [ZTMSCHEDULE]**{** XE "ZTMSCHEDULE" **}** and not for interactive use.

- Toolkit Options Attached To The Kernel Systems Manager Menu [EVE]

  Two sets of menu diagrams are exported with Toolkit. They are attached to various options on the Kernel Systems Manager Menu [EVE]. They are as follows:

  1. The Program Integrity Checker option [XUINTEG]**{** XE "XUINTEG" **}{** XE "Menu Tree Roots:Toolkit Options Attached To The Kernel Systems Manager Menu:Program Integrity Checker option [XUINTEG]" **}{** XE "Toolkit Options Attached To The Kernel Systems Manager Menu:Program Integrity Checker option [XUINTEG]" **}{** XE "Program Integrity Checker option [XUINTEG]" **}** is found in two places:

      a. System Security menu [XUSPY]**{** XE "System Security Menu [XUSPY]" **}** on [EVE]

      b. Routine Management Menu [XUROUTINES]**{** XE "Routine Management Menu [XUROUTINES]" **}** under the Operations Management menu [XUSITEMGR]**{** XE "Operations Management menu [XUSITEMGR]" **}** on [EVE].

  2. The options Bring in Sent Routines [XTMOVE-IN]**{** XE "XTMOVE-IN" **}{** XE "Menu Tree Roots:Toolkit Options Attached To The Kernel Systems Manager Menu:Bring in Sent Routines option <Locked with XUPROGMODE> [XTMOVE-IN]" **}{** XE "Toolkit Options Attached To The Kernel Systems Manager Menu:Bring in Sent Routines option <Locked with XUPROGMODE> [XTMOVE-IN]" **}{** XE "Bring in Sent Routines option <Locked with XUPROGMODE> [XTMOVE-IN]" **}** and Move Routines across Volume Sets [XTMOVE]**{** XE "XTMOVE" **}{** XE "Menu Tree Roots:Toolkit Options Attached To The Kernel Systems Manager Menu:Move Routines across Volume Sets option <Locked with XUPROGMODE> [XTMOVE]" **}{** XE "Toolkit Options Attached To The Kernel Systems Manager Menu:Move Routines across Volume Sets option <Locked with XUPROGMODE> [XTMOVE]" **}{** XE "Move Routines across Volume Sets option <Locked with XUPROGMODE> [XTMOVE]" **}** are found in the Routine Management Menu**{** XE "Routine Management Menu [XUROUTINES]" **}** under the Operations Management menu**{** XE "Operations Management menu

[XUSITEMGR]" **}** on [EVE]. Both of these options are locked with the XUPROGMODE security key**{** XE "XUPROGMODE" **}**.

- Kermit File Transfer Options**{** XE "Menu Tree Roots:Kermit File Transfer Options" **}{** XE "Kermit File Transfer Options" **}**

  Toolkit supports use of the Kermit file transfer protocol as an alternate editor. This allows the transfer of files from a PC or other system into a mail message or other VA FileMan word-processing field.

Programmer Options [XUPROG]

<Locked: XUPROG>

{ XE "Exported Options (Menu Structure):Programmer Options [XUPROG]" }{ XE "Menu Tree Roots:Programmer Options [XUPROG]" }{ XE "Programmer Options [XUPROG]" }

```
NTEG Build an 'NTEG' routine for a package  .........................[XTSUMBLD]
PG   Programmer mode <Locked: XUPROGMODE>  ........................[XUPROGMODE]
     Calculate and Show Checksum Values  ....................[XTSUMBLD-CHECK]
     Delete Unreferenced Options  ........................[XQ UNREF'D OPTIONS]
     Error Processing ...  ......................................... [XUERRS]
     Global Block Count  ...................................[XU BLOCK COUNT]
     List Global <Locked: XUPROGMODE>  .............................[XUPRGL]
     Map Pointer Relations  .......................................[DI DDMAP]
     Number base changer <Locked: XUPROGMODE>  .......[XT-NUMBER BASE CHANGER]
     Routine Tools ...  ...............................[XUPR-ROUTINE-TOOLS]
          %Index of Routines .......................................[XUINDEX]
          Compare routines on tape to disk .................[XUPR-RTN-TAPE-CMP]
          Compare two routines ..........................[XT-ROUTINE COMPARE]
          Delete Routines <Locked: XUPROGMODE> ......................[XTRDEL]
          First Line Routine Print ......................[XU FIRST LINE PRINT]
          Flow Chart Entire Routine ..................................[XTFCR]
          Flow Chart from Entry Point ................................[XTFCE]
          Group Routine Edit <Locked: XUPROGMODE> ...................[XTRGRPE]
          Input routines <Locked: XUPROG> .......................[XUROUTINE IN]
          List Routines ............................................[XUPRROU]
          Output routines .......................................[XUROUTINE OUT]
          Routine Edit <Locked: XUPROGMODE> ....................[XUPR RTN EDIT]
          Variable changer <Locked: XUPROGMODE> ..........[XT-VARIABLE CHANGER]
          Version number update <Locked: XUPROGMODE> .......[XT-VERSION NUMBER]
     Test an option not in your menu <Locked: XUMGR>  ........[XT-OPTION TEST]
     Verifier Tools Menu  .......................................[XTV MENU]
          Update with current routines ..........................[XTVR UPDATE]
          Routine Compare - Current with Previous ...............[XTVR COMPARE]
          Accumulate Globals for Package ........................[XTVG UPDATE]
          Edit Verification Package File ..............[XTV EDIT VERIF PACKAGE]
          Global Compare for selected package ...................[XTVG COMPARE]
          Last Routine Change Date Recorded .....[XTVR MOST RECENT CHANGE DATE]
          UNDO Edits (Restore to Older Version of Routine).....................
          .......................................[XTVR RESTORE PREV ROUTINE]
```

Capacity Management [XTCM MAIN]

{ XE "Exported Options (Menu Structure):Capacity Management [XTCM MAIN]" }{
XE "Menu Tree Roots:Capacity Management [XTCM MAIN]" }{ XE "Capacity
Management [XTCM MAIN]" }

```
VPM   VAX/ALPHA Capacity Management  ...............................[XUCM MAIN]
         Resource Usage Menu ... .....................................[XUCPMENU]
           Write raw Resource Usage data ........................[XUCPRAWPRINT]
           Sort raw Resource Usage data .............................[XUCPSORT]
           Print formatted report (Table/Graph) ...............[XUCPFORMATTED]
           Kill raw Resource Usage data .............................[XUCPKILL]
           Enable/Disable collection of Resource Usage data .......[XUCPTOGGLE]
         VAX/ALPHA Performance Monitor ... ..........[XUCM PERFORMANCE MONITOR]
           Enable/Disable VPM ...................................[XUCM ON/OFF]
           Manual Purge of VPM Data ..............................[XUCM PURGE]
           Performance Assurance ... ................................[XUCM PA]
             EL Edit # Days to Compute Reference Ranges .[XUCM EDIT REF THRESH]
             ES Edit Volume Set Threshold ...........[XUCM EDIT VOL SET THRESH]
             EV Edit VMS Disk Space Threshold .......[XUCM EDIT DISK THRESHOLD]
                Compute New Local References ...[XUCM COMPUTE LOCAL REFERENCES]
                Enable Alerts for Selected Metrics ...........[XUCM SET ALERTS]
                Performance Analysis ............................[XUCM ANALYSE]
           Setup Performance Monitor  ............................[XUCM SETUP]
           VPM Reports ... ......................................[XUCM REPORTS]
             LL Locking Data ......................................[XUCM LOCKS]
             LM CPU Modes/Compute States ..........................[XUCM MODES]
             LP Raw Paging/BIO/DIO/FLS/MLS ..........................[XUCM PAGE]
             LR List Raw RTHIST Data for a Range of Dates[XUCM RAW RTHIST DATA]
             LS List Raw System Data ...........................[XUCM LIST RAW]
             LV List Volume Set Information ..........[XUCM LIST VOL SET INFO]
             LW List Workday Averages for Selected Metric(s)...................
                ........................................[XUCM LIST DAILY STATS]
                Bernstein Response Time Reports ... ...............[XUCMBR MENU]
                   Average Response Time by Nodename.................[XUCMBR2B]
                   Bernstein RT Statistics (detailed)................[XUCMBR2]
                   Nodename Average by Day of Week...................[XUCMBR2C]
                   Site/Event Rate Summary..........................[XUCMBR2A]
                Disk Drive Raw Data Statistics ... .................[XUCM DISK]
                   GIO  Graph I/O Operation Rate ............[XUCM GRAF DSK IO]
                   GQ   Graph Disk Queue Length ............[XUCM GRAF DSK QUE]
                   IO   Disk I/O Operation Rate ..................[XUCM DSK IO]
                   Q    Disk Drive Request Queue Length .........[XUCM DSK QUE]
                        List Disk Drive Raw Data ...............[XUCM DISK RAW]
                Graph Workday Averages for Selected Metric .[XUCM GRAF MET AVE]
      Move Host File to Mailman ...............................[XTCM DISK2MAIL]
      Response Time Log Options ........................................[XURTLM]
        Enable/Disable RT Logging  .....................................[XURTL]
        Print RT Report  ...............................................[XURTLP]
        Long RT Report Print  .........................................[XURTLPL]
        Graphic RT Report Print  ......................................[XURTLPG]
        Multiday RT Averages  .........................................[XURTLMA]
        Kill Raw RT Data, Save Means  ..................................[XURTLK]
        Copy RT Raw Data to FM File  ...................................[XURTLC]
        Destroy FM Copy of Raw RT Data  ...............................[XURTLCK]
```

{ XE "Exported Options (Menu Structure):Capacity Management [XTCM MAIN]" }

Capacity Management [XTCM MAIN] options (continued):

(Only 486 configurations see the following menu:)

```
   MSM Capacity Management Manager's Menu .................[XUCS MANAGER MENU]
      CM Reports Menu  ....................................[XUCSR REPORTS MENU]
         DATE/VG MSM CM Reports ...................[XUCSRB REPORTS BY (DATE,VG)]
            CPU/DISK Utilization Report (By Date/VG) ...[XUCSRB CPU/DISK REPORT]
            Global Reference Report (By Date/VG) ...........[XUCSRB GREF REPORT]
            Response Time Report (By Date/VG) ..........[XUCSRB RESPONSE REPORT]
            Routine CMNDS/GREF Report (by Date/VG)[XUCSRB ROU CMNDS/GREF REPORT]
            System Statistical Report (By Date/VG) .....[XUCSRB SYS STAT REPORT]
         VG/DATE MSM CM Reports ...................[XUCSRA REPORTS BY (VG,DATE)]
            CPU/DISK Utilization Report (By VG/Date) ...[XUCSRA CPU/DISK REPORT]
            Global Reference Report (By VG/Date) ...........[XUCSRA GREF REPORT]
            Response Time Report (By VG/Date) ..........[XUCSRA RESPONSE REPORT]
            Routine CMNDS/GREF Report (by VG/Date)[XUCSRA ROU CMNDS/GREF REPORT]
            System Statistical Report (By VG/Date) .....[XUCSRA SYS STAT REPORT]
         Graph Menu  ......................................[XUCSRG GRAPHS MENU]
            Ave. %CPU & %DISK Graph ....................[XUCSRG CPU-DISK GRAPH]
            Ave. Response Time Graph ...............[XUCSRG RESPONSE TIME GRAPH]
      Manually Purge CM Data  ......................[XUCS MANUAL PURGE OF DATA]
      MSM Site Parameters Enter/Edit Menu  ...............[XUCS SITE EDIT MENU]
         Edit MSM CM Site Parameters  .........................[XUCS SITE EDIT]
         Enter/Edit Volume Group (Node)  .................[XUCS VOL GROUP EDIT]
         Print/Display System Configuration Parameters .........................
            ....................................[XUCS SYS CONFIG PARMS DISPLAY]
```

Application Utilities [XTMENU]

{ XE "Exported Options (Menu Structure):Application Utilities [XTMENU]" }{ XE "Menu Tree Roots:Application Utilities [XTMENU]" }{ XE "Application Utilities [XTMENU]" }

```
Duplicate Resolution System <Locked: XDR> ... ..................[XDR MAIN MENU]
   XDRO  Operations ... ...............................[XDR OPERATIONS MENU]
     DSS  Display Search Status <Locked: XDR> ....[XDR DISPLAY SEARCH STATUS]
     SRCH Start/Halt Duplicate Search ......................[XDR SEARCH ALL]
     VPD  Verify Potential Duplicates ......................[XDR VERIFY ALL]
     SPD  Verify Selected Potential Duplicate Pair [XDR VERIFY SELECTED PAIR]
     MVD  Merge Ready to Merge Verified Duplicates[XDR MERGE READY DUPLICATES]
     SVD  Merge Selected Verified Duplicate Pair  ...[XDR MERGE SELECTED PAIR]
   XDRU  Utilities ... ................................[XDR UTILITIES MENU]
     CHCK Check Pair of Records to see if Duplicates ........[XDR CHECK PAIR]
     ADD  Add Verified Duplicate Pair ...............[XDR ADD VERIFIED DUPS]
     FIND Find Potential Duplicates for an Entry in a File
               ................................[XDR FIND POTENTIAL DUPLICATES]
     EDIT Edit Duplicate Record Status ..........[XDR EDIT DUP RECORD STATUS]
     VIEW View Duplicate Record Entries ..........[XDR VIEW DUPLICATE RECORD]
     PRNT Print List of File Duplicates ....................[XDR PRINT LIST]
     TSF  Tally STATUS and MERGE STATUS fields .....[XDR TALLY STATUS FIELDS]
   XDRM  Manager Utilities ...  <Locked: XDRMGR> .......[XDRMANAGER UTILITIES]
     AUTO Automatically Merge all Ready Verified Duplicates .[XDR AUTO MERGE]
     FILE Edit Duplicate Resolution File ......[XDR EDIT DUP RESOLUTION FILE]
     PRGE Purge Duplicate Record File ...........................[XDR PURGE]
Multi-Term Lookup Main Menu ... .................................[XTLKUSER2]
   Multi-Term Lookup (MTLU) .....................................[XTLKLKUP]
   Print Utility ................................................[XTLKPRTUTL]
   Utilities for MTLU ... <Locked: XTLKZMGR> ..................[XTLKUTILITIES]
     KL    Delete Entries From Look-up <Locked: XTLKZMGR> .......[XTLKMODPARK]
     ST    Add Entries To Look-Up File <Locked: XTLKZMGR> .......[XTLKMODPARS]
           Add/Modify Utility ...  ...............................[XTLKMODUTL]
                SH Shortcuts ......................................[XTLKMODSH]
                KE Keywords .......................................[XTLKMODKY]
                SY Synonyms .......................................[XTLKMODSY]
```

Toolkit Queuable Options [XTQUEUABLE OPTIONS]

{ XE "Exported Options (Menu Structure):Toolkit Queuable Options [XTQUEUABLE OPTIONS]:Alpha Sites" }{ XE "Menu Tree Roots:Toolkit Queuable Options [XTQUEUABLE OPTIONS]:Alpha Sites" }{ XE "Toolkit Queuable Options [XTQUEUABLE OPTIONS]:Alpha Sites" }**For Alpha Sites:**

```
Compile VPM Summaries/Purge Old Data ..........................[XUCM TASK NIT]
File New Data .................................................[XUCM TASK VPM]
```

{ XE "Exported Options (Menu Structure):Toolkit Queuable Options [XTQUEUABLE OPTIONS]:486 Sites" }{ XE "Menu Tree Roots:Toolkit Queuable Options [XTQUEUABLE OPTIONS]:486 Sites" }{ XE "Toolkit Queuable Options [XTQUEUABLE OPTIONS]:486 Sites" }**For 486 Sites:**

```
AM MSM RTHIST Task Option................................[XUCSTASK AM RTHIST]
```

```
Tasked CM File Update.............................[XUCSTASK FILE UPDATE AUTO]
PM MSM RTHIST Task Option.............................[XUCSTASK PM RTHIST]
Auto Purge of CM Data.............................[XUCSTASK PURGE CM DATA]
```

Toolkit Options Attached to Kernel Systems Manager Menu [EVE]

The following sets of menu diagrams are exported with Toolkit. They are attached to various options on the Kernel Systems Manager Menu [EVE] as described below.

1. The Program Integrity Checker option [XUINTEG]**{** XE "XUINTEG" **}{** XE "Menu Tree Roots:Toolkit Options Attached To The Kernel Systems Manager Menu:Program Integrity Checker option [XUINTEG]" **}{** XE "Toolkit Options Attached To The Kernel Systems Manager Menu:Program Integrity Checker option [XUINTEG]" **}{** XE "Program Integrity Checker option [XUINTEG]" **}** reports to two separate menus on [EVE]:

   a. System Security menu [XUSPY]**{** XE "System Security Menu [XUSPY]" **}** on [EVE].**{** XE "Exported Options (Menu Structure):Toolkit Options attached to the Kernel Systems Manager Menu [EVE]:Program Integrity Checker option [XUINTEG]" **}{** XE "Menu Tree Roots:Toolkit Options Attached To The Kernel Systems Manager Menu:Program Integrity Checker option [XUINTEG]" **}{** XE "Toolkit Options Attached To The Kernel Systems Manager Menu:Program Integrity Checker [XUINTEG]" **}{** XE "Program Integrity Checker option [XUINTEG]" **}**

```
Systems Manager Menu  .........................................[EVE]
   System Security ...  .......................................[XUSPY]
      Program Integrity Checker  ...........................[XUINTEG]
```

   b. Routine Management Menu [XUROUTINES] under the Operations Management menu [XUSITEMGR] on [EVE].**{** XE "Exported Options (Menu Structure):Toolkit Options attached to the Kernel Systems Manager Menu [EVE]:Program Integrity Checker option [XUINTEG]" **}{** XE "Menu Tree Roots:Toolkit Options Attached To The Kernel Systems Manager Menu:Program Integrity Checker option [XUINTEG]" **}{** XE "Toolkit Options Attached To The Kernel Systems Manager Menu:Program Integrity Checker option [XUINTEG]" **}{** XE "Program Integrity Checker option [XUINTEG]" **}**

```
Systems Manager Menu  .........................................[EVE]
   Operations Management ...  ...........................[XUSITEMGR]
      Routine Management Menu .........................[XUROUTINES]
         Program Integrity Checker  ......................[XUINTEG]
```

2. The options Bring in Sent Routines [XTMOVE-IN]**{** XE "XTMOVE-IN" **}{** XE "Menu Tree Roots:Toolkit Options Attached To The Kernel Systems Manager Menu:Bring in Sent Routines option <Locked with XUPROGMODE> [XTMOVE-IN]" **}{** XE "Toolkit Options Attached To The Kernel Systems Manager Menu:Bring in Sent Routines option <Locked with XUPROGMODE> [XTMOVE-IN]" **}{** XE "Bring in Sent Routines option <Locked with XUPROGMODE> [XTMOVE-IN]" **}** and Move Routines across Volume Sets [XTMOVE]**{** XE "XTMOVE" **}{** XE "Menu Tree Roots:Toolkit Options Attached To The Kernel Systems Manager Menu:Move Routines across Volume Sets option <Locked with XUPROGMODE> [XTMOVE]" **}{** XE "Toolkit Options Attached To The Kernel Systems Manager Menu:Move Routines across Volume Sets option <Locked with XUPROGMODE> [XTMOVE]" **}{** XE "Move Routines across Volume Sets option <Locked with XUPROGMODE> [XTMOVE]" **}** are found in the Routine Management Menu [XUROUTINES]**{** XE "Routine Management Menu [XUROUTINES]" **}** under the Operations Management menu [XUSITEMGR]**{** XE "Operations Management menu [XUSITEMGR]" **}** on [EVE]. Both of these options are locked with the XUPROGMODE security key**{** XE "XUPROGMODE" **}**.

```
Systems Manager Menu  .........................................[EVE]
   Operations Management ... ...............................[XUSITEMGR]
      Routine Management Menu ... .........................[XUROUTINES]
         Bring in Sent Routines <Locked: XUPROGMODE> ........[XTMOVE-IN]
         Move Routines across Volume Sets <Locked: XUPROGMODE>..[XTMOVE]
```

Kermit File Transfer Options

Toolkit supports use of the i.Exported Options (Menu Structure):Kermit file transfer protocol;**{** XE "Kermit file transfer protocol" **}{** XE "Menu Tree Roots:Kermit File Transfer Options" **}{** XE "Kermit File Transfer Options" **}**Kermit file transfer protocol as an alternate editor. This allows the transfer of files from a PC or other system into a mail message or other VA FileMan word-processing field.

```
KERMIT MENU ... ...............................................[XT-KERMIT MENU]
   E   Edit KERMIT holding file ...............................[XT-KERMIT EDIT]
   R   Receive KERMIT file ..................................[XT-KERMIT RECEIVE]
   S   Send KERMIT file ........................................[XT-KERMIT SEND]
```

Cross-references

This chapter contains a description of the MUMPS-type cross-references and selected triggers that exist on fields in the Toolkit's files.

The cross-references are grouped by file. The field affected is identified along with the cross-reference's name, or number if there is no name, (X-ref ID) and a brief description.**{ XE "Cross-references" }{ XE "MUMPS Cross-references" }**

RESPONSE TIME file (#3.091){ XE "RESPONSE TIME file" }{ XE "Files:RESPONSE TIME" }

Field	X-ref ID	Description
DATE_UCI,VOL	"C"	This cross-reference was created to permit look-up of Response Time (RT) data by UCI,VOL.

DUPLICATE RECORD file (#15){ XE "DUPLICATE RECORD file" }{ XE "Files:DUPLICATE RECORD" }

Field	X-ref ID	Description
RECORD1	#2	This TRIGGER sets the DATE FOUND field when an entry is added to this file.
RECORD1	#3	This TRIGGER sets the WHO CREATED field when an entry is added to this file.
RECORD2	"B"	This is a mnemonic cross-reference.
STATUS	"APOT"	The form of this cross-reference, using the PATIENT file (#2) as an example, is: ^VA(15,"APOT","DPT(",fe#1^fe#2,DA)="" The fe#s will be in the order low^high. This cross-reference will be killed when the STATUS field is changed to any other value.

DUPLICATE RECORD file (continued):

Field	X-ref ID	Description
Cross - references:STATUS	"ANOT"	This cross-reference will exist only when the STATUS is Verified, Not A Duplicate. The form of this cross-reference, using the PATIENT file (#2) as an example, is: ^VA(15,"ANOT","DPT(","fe#1^fe#2,DA)="" The order of the fe#s will be low^high. This cross-reference will be killed when the STATUS field is changed to any other value.
STATUS	"AVDUP"	This cross-reference permanently exists for all entries in this file that are verified duplicates. The form of this cross-reference, using the PATIENT file (#2) as an example, is: ^VA(15,"AVDUP","DPT(","fe#1^fe#2",DA)="" The order of the fe#s will be low^high.
STATUS	"ALK"	This cross-reference will exist, in one form or the other, from the time an entry is made in this file until the records are merged or verified as not a duplicate. The form of this cross-reference, using the PATIENT file (#2) as an example, is: ^VA(15,"ALK",^DPT(",fe#1,n,fe#2,DA)="" "n" will be 1 for a potential duplicate and 2 for a verified duplicate. When "n" is 1, there will be two "ALK" cross-references with the fe#s reversed. When "n" is 2, there will be only one "ALK" cross-reference and the fe#s will be in the order RECORD1 RECORD2. The "ALK2" cross-reference on MERGE DIRECTION will reset this cross-reference to be in the order "from" "to". Once merged, the "ALK" cross-reference for this entry will be killed by the "ALK3" cross-reference on the MERGE STATUS field.

DUPLICATE RECORD file (continued):

Field	X-ref ID	Description
STATUS	#5	This TRIGGER sets the DATE VERIFIED field. It is not fired for a status of Potential Duplicate, Unverified. If the status is changed from verified, the DATE VERIFIED field is deleted and will be reset if appropriate.
STATUS	#6	This TRIGGER sets the WHO VERIFIED field. It is not fired for a status of Potential Duplicate, Unverified. If the status is changed from verified, the WHO VERIFIED field is deleted and reset as appropriate. The conditional logic on this TRIGGER was modified using ^%GEDIT to prevent firing during a RE-INDEX.
STATUS	#7	This TRIGGER deletes the MERGE DIRECTION field when the status is being changed from "Verified Duplicate" to any other value. The conditional logic on this TRIGGER was modified using ^%GEDIT to prevent firing during a RE-INDEX.
STATUS	#8	This TRIGGER sets the MERGE STATUS field to 0=NOT READY when the status is set to "Verified Duplicate". The MERGE STATUS field is deleted when the status is changed from "Verified Duplicate" to any other value. The conditional logic on this TRIGGER was modified using ^%GEDIT to prevent firing during a RE-INDEX.
STATUS	#9	This TRIGGER sets the DATE RESOLVED field when the status is set to "Verified, Not A Duplicate". The DATE RESOLVED field is deleted when the status is changed to any other value.

DUPLICATE RECORD file (continued):

Field	X-ref ID	Description
STATUS	#10	This TRIGGER sets the WHO CHANGED field to the user number any time the status is changed from "Verified Duplicate" to any other value. The conditional logic on this TRIGGER was modified using ^%GEDIT to prevent firing during a RE-INDEX.
MERGE DIRECTION	"ALK2"	This cross-reference kills the existing "ALK" cross-reference for this entry and resets it to be in order "from" "to". See the "ALK" cross-reference on the STATUS field for more information.
MERGE DIRECTION	"AFR"	The "AFR" cross-reference is used by the INPUT TRANSFORMS on the .01 and .02 field to prevent entering a file entry that has already been merged away.
MERGE DIRECTION	"ATO"	The "AFR" cross-reference is used by the INPUT TRANSFORMS on the .01 and .02 field to prevent entering a file entry that has already been merged into.
MERGE STATUS	"AFR"	This cross-reference is permanent and exists for all merged entries. It indicates which file entry was the "from" entry. It is used by the INPUT TRANSFORMS on the .01 and .02 fields to prevent entering a file entry that has already been merged away. The form of this cross-reference, using File #2 as an example, is: ^VA(15,"AFR","DPT(",fe#,DA)="" fe# is the "from" file entry. Note that the kill side of this cross-reference kills all possible combinations because deleting an entry in this file using ^DIK results in the MERGE DIRECTION field being NULL when this cross-reference is fired.

DUPLICATE RECORD file (continued):

Field	X-ref ID	Description
MERGE STATUS	"ATO"	This cross-reference is permanent and exists for all merged entries. It indicates which file entry was the "to" entry. It is currently not used by the dictionary. The form of this cross-reference, using the PATIENT file (#2) as an example, is: ^VA(15,"ATO","DPT(",fe#,DA)="" fe# is the "to" file entry. Note that the kill side of this cross-reference kills all possible combinations, because deleting an entry in this file using ^DIK results in the MERGE DIRECTION field being NULL when this cross-reference is fired.
MERGE STATUS	"AMRG"	This cross-reference is short lived and exists only for entries that are verified duplicates that have not yet been merged. The form of this cross-reference, using the PATIENT file (#2) as an example, is: ^VA(15,"AMRG","DPT(",n,DA)="" "n" will be 0 for a MERGE STATUS of Not Ready and a 1 for Ready. Once merged the "AMRG" cross-reference for this entry will be killed.
MERGE STATUS	"ALK3"	This cross-reference kills the "ALK" cross-reference for this entry. See the "ALK" cross-reference on the STATUS field for more information.
MERGE STATUS	#5	This TRIGGER sets the DATE RESOLVED field when the merge status is set to "Merged". The conditional logic on this TRIGGER was modified using ^%GEDIT to prevent firing during a RE-INDEX.

DUPLICATE RECORD file (continued):

Field	X-ref ID	Description
MERGE STATUS	"ADJ"	This cross-reference is fired only when an entry has been merged. The routine ^XDRDADJ then looks at the file to determine if any other file entry pairs need to be adjusted. For example, using the PATIENT file (#2), if patient 5 was merged to patient 10, and there was a potential duplicate entry for patient 5 and patient 15, that entry would be changed to patient 10 and patient 15. There are other possible situations that are far more complex than the above example.
MFI CONTROLLED	#2	This trigger sets the MFI RESOLVED field to 0=Unresolved when a value is entered into this field. It has no effect on the change/delete side because this field is not editable.
MFI RESOLVED	"AMFIP2"	This cross-reference sets the value of the "AMFIP" cross-reference to 1 once this entry is resolved. It sets it back to "" if this field is changed from resolved.
STATUS (subfield of MERGE PACKAGES multiple)	"ANR"	This cross-reference is set only when the STATUS is "Not Ready". It is used to determine when all entries in this subfile are ready, which means the primary file entries in the DUPLICATE RECORD file (#15) entry may now be merged.
STATUS (subfield of MERGE PACKAGES multiple)	#2	This TRIGGER sets the MERGE STATUS field in this subfiles parent file. The MERGE STATUS field is set to a value computed by the computed field READY in this subfile. The value will compute to 0=Not Ready if there is any entry in this subfile that is not ready. It will compute to 1=Ready only after all entries in this subfile have said they are ready. This TRIGGER must not be modified to fire on the kill side.

DUPLICATE RESOLUTION file (#15.1){ XE "DUPLICATE RESOLUTION file" }{ XE "Files:DUPLICATE RESOLUTION" }

Field	X-ref ID	Description
FILE TO BE CHECKED	"AGL"	This cross-reference is utilized by the XDRDUP when adjusting existing score values for a Duplicate Record entry.
POTENTIAL DUPLICATE THRESHOLD%	"APDTI"	This cross-reference is set whenever the Potential Duplicate Threshold is increased. This cross-reference is utilized by the Duplicate Resolution software to let it know to go through the existing Non-verified Potential Duplicates and see if the duplicate record pair meet the increased Potential Duplicate Threshold. If not, the duplicate record pair entry is deleted from the file. The variable XDR("APDTI") is left around if somebody deletes the entry from the DUPLICATE RESOLUTION file (#15.1). This is due to FileMan never allowing you to know if a person is just editing, adding, or deleting an entry.
FILE FOR INFORMATION	"AZ1"	This cross-reference is used to make FileMan log the response so that the input transform on the FIELD TO BE CHECKED can refer to the $P value of this field.

KERMIT HOLDING file (#8980){ XE "KERMIT HOLDING file" }{ XE "Files:KERMIT HOLDING" }

Field	X-ref ID	Description
CREATOR	#1	Trigger cross-reference.
NAME	#2	Needed as part of the security screen.

LOCAL KEYWORD file (#8984.1){ XE "LOCAL KEYWORD file" }{ XE "Files:LOCAL KEYWORD" }

Field	X-ref ID	Description
ENTRY	"AC"	This cross-reference passes the keyword or "tokenized" phrase into the special look-up cross-reference of the target file.
NAME	"AIHS"	This cross-reference passes the keyword or tokenized phrase into the special look-up cross-reference of the target file in the same manner as is done on the ENTRY field.

LOCAL SHORTCUT file (#8984.2){ XE "LOCAL SHORTCUT file" }{ XE "Files:LOCAL SHORTCUT" }

Field	X-ref ID	Description
FREQUENTLY USED NARRATIVE	"AC"	This cross-reference is of the form: ^XT(8984.2,"AC",global root,shortcut,DA)
ENTRY	"AD"	Resets the "AC" cross-reference (normally set when editing FREQUENTLY USED NARRATIVE).

LOCAL SYNONYM file (#8984.3){ XE "LOCAL SYNONYM file" }{ XE "Files:LOCAL SYNONYM" }

Field	X-ref ID	Description
SYNONYM	"AA"	Associates the look-up file # with the synonym and the MTLU term. Takes the form: ^XT(8984.3,"AA",LOOKUP FILE,SYNONYM,MTLU TERM)
TERM	"AC"	Associates the synonym with the global root of the look-up file.
ASSOCIATED FILE	"AD"	Associates the synonym with the global root of the look-up file in the "AC" cross-reference.

Archiving and Purging

ARCHIVING

There are no package-specific **{** XE "Archiving" **}**archiving procedures or recommendations for Toolkit.

For the Duplicate Resolution Utilities**{** XE "Duplicate Resolution Utilities," **}** each merged record pair is meant to stay stored in the DUPLICATE RECORD file (#15)**{** XE "DUPLICATE RECORD file" **}{** XE "Files:DUPLICATE RECORD" **}**. At some point in time, when FileMan has implemented some sort of merge node for its records, archiving could be done.

PURGING

Toolkit provides several options to facilitate the **{** XE "Purging" **}**purging of Toolkit files and the cleanup of Toolkit-produced globals. The chart below contains a list of the purging options. The recommended scheduling frequency is shown for some options; all those options are queuable. The location of a detailed discussion of each option is given; unless otherwise noted, the reference given is to a chapter in the *Kernel Toolkit User Manual V. 7.3.*

Purging Option	Reference for Detailed Info.
Destroy FM Copy of Raw RT Data [XURTLCK]**{** XE "Purging Options:Destroy FM Copy of Raw RT Data option [XURTLCK]" **}{** XE "Destroy FM Copy of Raw RT Data option [XURTLCK]" **}**	Capacity Management
Kill Raw RT Data, Save Means [XURTLK]**{** XE "Purging Options:Kill Raw RT Data, Save Means option [XURTLK]" **}{** XE "Kill Raw RT Data, Save Means option [XURTLK]" **}**	Capacity Management
Kill Raw Resource Usage Data [XUCPKILL]**{** XE "Purging Options:Kill Raw Resource Usage Data option [XUCPKILL]" **}{** XE "Kill Raw Resource Usage Data option [XUCPKILL]" **}**	Capacity Management (Alpha Sites)

Manually Purge CM Data [XUCS MANUAL PURGE OF DATA]{ XE "Purging Options:Manually Purge CM Data option [XUCS MANUAL PURGE OF DATA]" }{ XE "Manually Purge CM Data option [XUCS MANUAL PURGE OF DATA]" }	Capacity Management (486 Sites)
Manual Purge of VPM Data [XUCM PURGE]{ XE "Purging Options:Manual Purge of VPM Data option [XUCM PURGE]" }{ XE "Manual Purge of VPM Data option [XUCM PURGE]" }	Capacity Management (Alpha Sites)

There are no purging requirements in the Multi-Term Look-Up utility.

The Duplicate Resolution Utilities{ XE "Duplicate Resolution Utilities," } provide the capability to purge all records in the DUPLICATE RECORD file (#15) that have a status of either verified non-duplicates or unverified potential duplicates. You cannot purge entries that are verified duplicates. The penalty for the purging of these records is that the duplicate checking algorithm checks to see if the records are already in the DUPLICATE RECORD file (#15) and if they are it doesn't enter them again. This saves processing time and also the user's time in re-verifying a pair as not duplicates.

Callable Routines

This chapter contains two lists of entry points into routines that are available for general use. The first list consists of calls that can be used in other applications. The second list contains utilities that can only be used directly from the MUMPS prompt. In addition, several extrinsic functions that can be used in applications or from programmer mode are mentioned.**{** XE "Extrinsic Functions" **}{** XE "Callable Entry Points" **}{** XE "Entry Points" **}**

Every entry point, extrinsic function, and **{** XE "Executable Node" **}**executable node is described in the *Kernel Toolkit User Manual V. 7.3.* Refer to the indicated chapter in that manual for details, including input and output variables for the calls.

APPLICATION ENTRY POINTS

Entry Point	Description	Chapter
`{ XE  "Application Entry Points:RECEIVE^XTKERMIT" }RECEIVE^XTKERMIT`	Receive File Using Kermit	Tools
`{ XE  "Application Entry Points:SEND^XTKERMIT" }SEND^XTKERMIT`	Send File Using Kermit	Tools
`{ XE  "Application Ent Points:>$$SY^XTLKMGR" }$$SY^XTLKMGR`	Add synonyms to LOCAL SYNONYM file (#8984.3)	MTLU
`{ XE  "Application Ent Points:>$$K^XTLKMGR" }$$K^XTLKMGR`	Add keywords to LOCAL KEYWORD file (#8984.1)	MTLU
`{ XE  "Application Ent Points:>$$SH^XTLKMGR" }$$SH^XTLKMGR`	Add shortcuts to LOCAL SHORTCUT file (#8984.2)	MTLU
`{ XE  "Application Ent Points:>$$L^XTLKMGR" }$$L^XTLKMGR`	Add entries to LOCAL LOOKUP file (#8984.4)	MTLU
`{ XE  "Application Ent Points:>$$DSH^XTLKMGR" }$$DSH^XTLKMGR`	Delete shortcuts	MTLU
`{ XE  "Application Ent Points:>$$DSY^XTLKMGR" }$$DSY^XTLKMGR`	Delete synonyms	MTLU
`{ XE  "Application Ent Points:>$$DK^XTLKMGR" }$$DK^XTLKMGR`	Delete keywords	MTLU
`{ XE  "Application Ent Points:>$$DLL^XTLKMGR" }$$DLL^XTLKMGR`	Delete entry from LOCAL LOOKUP file (#8984.4)	MTLU
`{ XE  "Application Entry Points:$$LKUP^XTLKMGR " }$$LKUP^XTLKMGR`	General Lookup Utility	MTLU

DIRECT MODE UTILITIES

Entry Point	Description	Chapter
{ XE "Direct Mode Utilities:>D ^%INDEX" }>D **^%INDEX**	Check and Verify Routine	Tools
{ XE "Direct Mode Utilities:>D ^nsNTEG" }>D **^nsNTEG**	Check Integrity of namespace (ns) Package	Tools
{ XE "Direct Mode Utilities:>D ONE^nsNTEG" }>D **ONE^nsNTEG**	Check Integrity Routine in namespace (ns) Package	Tools
{ XE "Direct Mode Utilities:>D ^XTBASE" }>D **^XTBASE**	Change Number Base	Tools
{ XE "Direct Mode Utilities:>D ^XTFCE **^XTFCE**	Produce Entry Point Flow Chart	Tools
{ XE "Direct Mode Utilities:>D ^XTFCR **^XTFCR**	Produce Routine Flow Chart	Tools
{ XE "Direct Mode Utilities:>D ^XTLAT **}>D ^XTLATSET**	Build VMS Startup Command File	Tools
{ XE "Direct Mode Utilities:>D ^XTRCM **^XTRCMP**	Compare Routine	Tools
{ XE "Direct Mode Utilities:>D TAPE^XTRCMP" }>D **TAPE^XTRCMP**	Compare Routine (tape to disk)	Tools
{ XE "Direct Mode Utilities:>D ^XTRGE **}>D ^XTRGRPE**	Edit Group of Routines	Tools
{ XE "Direct Mode Utilities:>D ^XTSUM **}>D ^XTSUMBLD**	Create Integrity Check Routines	Tools
{ XE "Direct Mode Utilities:>D CHECK^XTSUMBLD" }>D **CHECK^XTSUMBLD**	Calculate Checksum	Tools
{ XE "Direct Mode Utilities:>D ^XTVCH **^XTVCHG**	Change Variable	Tools
{ XE "Direct Mode Utilities:>D ^XTVNU **^XTVNUM**	Update Version Number	Tools

{ XE "Direct Mode Utilities:>X ^%Z" }	Edit Routine	Tools
{ XE "Direct Mode Utilities:>J ^ZTCPU" } **^ZTCPU**	Capture Usage Data (M/SQL)	Tools
{ XE "Direct Mode Utilities:>D CDPLOT^ZTCPU" } **>D CDPLOT^ZTCPU**	Graph Usage Report (M/SQL)	Tools
{ XE "Direct Mode Utilities:>D PRINT^ZTCPU" } **>D PRINT^ZTCPU**	Print Usage Report (M/SQL)	Tools
{ XE "Direct Mode Utilities:>D PURGE^ZTCPU" } **>D PURGE^ZTCPU**	Purge Usage Log (M/SQL)	Tools
{ XE "Direct Mode Utilities:>D STOP^Z" } **>D STOP^ZTCPU**	Stop Usage Data Collection (M/SQL)	Tools
{ XE "Direct Mode Utilities:>D ^%ZTP1" } **>D ^%ZTP1**	Print Routine First Line	Tools
{ XE "Direct Mode Utilities:>D ^%ZTPP" } **>D ^%ZTPP**	List Routines	Tools
{ XE "Direct Mode Utilities:>D ^%ZTRDEL" } **>D ^%ZTRDEL**	Delete Routine	Tools
{ XE "Direct Mode Utilities:>D ^ZTRTHV" } **>D ^ZTRTHV**	Summarize Usage Reports (VAX DSM)	Tools

External Relations

TOOLKIT'S PLACE IN DHCP

Toolkit provides a set of generic tools which are used by developers, system managers, documenters, verifiers, and packages to support distinct tasks. These tools have been developed to aid the Decentralized Hospital Computer Program (DHCP) development community and Information Resources Management (IRM) in writing, testing, and analysis of code. Toolkit fully integrates with VA FileMan V. 20.0 and Kernel V. 7.1.{ XE "External Relations" }

MULTI-TERM LOOK-UP

MTLU interacts with any DHCP package that is using a file in the LOCAL LOOKUP file (#8984.4){ XE "LOCAL LOOKUP file" }{ XE "Files:LOCAL LOOKUP" }{ XE "Multi-Term Look-Up (MTLU)" }.

DUPLICATE MERGE

These routines send bulletins to users about potential duplicates and merged records when MailMan is installed to deliver messages{ XE "Duplicate Merge Routines" }. The FileMan utilities to compare and transfer two entries are utilized by the XDR* routines. Any files that are going to be checked for duplicate entries must first be an entry in the DUPLICATE RECORD file (#15){ XE "DUPLICATE RECORD file" }{ XE "Files:DUPLICATE RECORD" }. The XDR* routines make calls to package developer written routines to determine if two records are potential duplicates. The XDR* routines also check the PACKAGE file (#9.4){ XE "PACKAGE file" }{ XE "Files:PACKAGE" } to check for packages that are affected by that record's merge.

TOOLKIT'S EXTERNAL RELATIONS WITH THE MUMPS OPERATING SYSTEMS

Toolkit depends upon the presence of one of the American National Standards Institute (ANSI) MUMPS environments it supports. Micronetics Standard MUMPS (MSM) and VAX Digital Standard MUMPS (VAX DSM) have become the primary ANSI MUMPS environments supported by Toolkit. DataTree MUMPS (DTM), InterSystems Standard MUMPS+ for the PDP-11 (M/11+), and MSM-Unix are also supported. Low priority support of the VAX M/SQL is also still maintained.

Operating system interfaces are involved in each aspect of Toolkit. Identifying the MUMPS operating system upon Toolkit's installation starts processes that create the appropriate environment. The ^%ZOSF global{ XE "Globals:%ZOSF" }{ XE

"^%ZOSF" **}** is built from an operating system-specific routine. By executing nodes of the ^%ZOSF global, implementation-specific functions that are not part of ANSI MUMPS are possible.

The %ZOSV routine**{ XE "^%ZOSV Routine" }** contains code that enables use of the VIEW command and $VIEW function to get information from the operating system.

The Kernel allows processors running different operating systems to be linked. The ^%ZOSF global makes this possible, as well. ^%ZOSF is never translated and thus may retain processor-specific information.

^%ZOSF("OS") contains two pieces of information about the current operating system: the name and the internal entry number from the MUMPS OPERATING SYSTEM file (#.7)**{ XE "MUMPS OPERATING SYSTEM file" }{ XE "Files:MUMPS OPERATING SYSTEM" }**. DISYS are set based on ^%ZOSF("OS"). If the ^%ZOSF global is defined, the VA FileMan init sends a task to the Manager's account to set the second piece of ^%ZOSF("OS"). The TaskMan option Check TaskMan's Environment [ZTMCHECK]**{ XE "Check TaskMan's Environment option [ZTMCHECK] displays the contents of ^%ZOSF(\"OS\").\;" }**

The Manager account**{ XE "Manager account" }** is generally reserved for operating system-specific routines and globals. Part of Toolkit must also reside in this account to take care of certain input/output procedures.

The VAX/Alpha Performance Monitor (VPM) for Toolkit was developed and tested on Digital Equipment VAX systems using VAX DSM 6.2, VMS 5.5-2, as well as DSM for OpenVMS on Alpha.

DBA APPROVALS and DATABASE INTEGRATION AGREEMENTS (DBIAs)

{ XE "DBA Approvals and DBIAs" }
1. INTEGRATION REFERENCE #295

```
                     NAME:  DBIA295          ENTRY:    295
       CUSTODIAL PACKAGE:  KERNEL                      San Francisco
     SUBSCRIBING PACKAGE:  TOOLKIT                     San Francisco
                   STATUS:  ACTIVE
                 DURATION:  Till Otherwise Agreed.

            DESCRIPTION:
```

Integration Agreement Request between Toolkit (all versions) and Kernel (all versions).

Toolkit and Kernel agree that both packages shall distribute all routines and data for MUMPS operating system interfaces (e.g. ZOSF, ZOSV*).

Toolkit and Kernel also agree that the menus, [XUPROG], [XTMENU], and [XTCM MAIN], can be attached to the Kernel menu [EVE].

2. INTEGRATION REFERENCE #316

NAME:	DBIA316-A	ENTRY: 316
CUSTODIAL PACKAGE:	VA FILEMAN	San Francisco
SUBSCRIBING PACKAGE:	TOOLKIT	San Francisco
STATUS:	ACTIVE	
DURATION:	Till Otherwise Agreed.	

DESCRIPTION:

1. When a new file is configured for use with MTLU, the variable-pointer "ENTRY" field is automatically updated in the LOCAL KEYWORD and LOCAL SHORTCUT files to reflect the new file. This must be handled via DIC/DIE calls with DIC/DIE being set to ^DD(file,.02,"V",. It is fully compatible with the interactive way of creating variable pointer type fields.

2. MTLU uses the string maintained in ^DD("KWIC"). There is currently no way of retrieving this information without directly referencing this node. As stated there is currently no way of extracting data stored in the node except by direct global hit.

Amendment 5/11/94

Toolkit DBIA 316 has been amended to include the $ORDER of ^DD in line QU+5^XTLKEFOP. This code identifies the variable pointer prefix associated with the selected lookup file and was inadvertently omitted.

```
S XTLKY=Y,XTLKPF=+$O(^DD(8984.2,.02,"V","B",+Y,"")) G:'XTLKPF KL
S XTLKPF=$P(^DD(8984.2,.02,"V",XTLKPF,0),U,4),XTLKUT=1
```

GLOBAL REFERENCE:

^DD(D0,.02,'V',

^DD('KWIC')

3. INTEGRATION REFERENCE #833

{ XE "DBA Approvals and DBIAs" **}**

NAME:	DBIA316-B	ENTRY:	833
CUSTODIAL PACKAGE:	VA FILEMAN		San Francisco
SUBSCRIBING PACKAGE:	TOOLKIT		San Francisco
STATUS:	ACTIVE		
DURATION:	Till Otherwise Agreed.		

DESCRIPTION:

3. The look-up routine, XTLKDICL**{** XE "XTLKDICL" **}**, is often executed recursively by FileMan. Under some conditions, it is not appropriate to proceed with the lookup and processing must pass back to DIC at the appropriate entry point. MTLU, therefore, needs support for the entry points ASK^DIC and RTN^DIC. Some of the variables that are used by the ASK^DIC and RTN^DIC calls are:

Variables:	Used in:
DO(2	EN2+3,EN2+5
DIC	TS+1
DIC(0	XTLKDICL+3,EN1+2
DIE	XTLKDICL+3
DIPGM(0	XTLKDICL+3,XTLKDICL+5
DO	TS
DO(2	TS,TS+1,TS+2
X	XTLKDICL+4,EN2+1,EN2+3,EN2+5,TS+1,TS+4,TS+8,TS+9
Y	EN2+1,TS,TS+8,TS+9 Label References:
EN1	TS+9
EN2	XTLKDICL+5,TS+8

External References:

ASK^DIC	EN1+2
RTN^DIC	XTLKDICL+3,EN2+3,EN2+5

The calls to RTN^DIC and ASK^DIC are granted for the exclusive use of the Kernel's Toolkit package.

ROUTINE:	DIC
COMPONENT:	D0
VARIABLES:	
COMPONENT:	RTN
VARIABLES:	

4. INTEGRATION REFERENCE #1062

{ XE "DBA Approvals and DBIAs" }

```
                        NAME:  1062              ENTRY:  1062
        CUSTODIAL PACKAGE:  VA FILEMAN                 San Francisco
      SUBSCRIBING PACKAGE:  TOOLKIT                    San Francisco
                      STATUS:  ACTIVE
                   DURATION:  Till Otherwise Agreed.

              DESCRIPTION:
```

Kernel Toolkit needs this agreement with FileMan to be able to use the variable D0 in DD definitions. Here are some examples of the use of variable D0.

```
15,99991      LOOKUP1                ;  COMPUTED

              MUMPS CODE:        S X="`"_+^VA(15,D0,0)
              ALGORITHM:         S X="`"_+^VA(15,D0,0)
              DESCRIPTION:       This field is used to navigate to the file
              pointed to by RECORD1.

              TECHNICAL DESCR:   This field is used to navigate to the file
              pointed to by RECORD1.

15,99992      LOOKUP2                ;  COMPUTED

              MUMPS CODE:        S X="`"_+$P(^VA(15,D0,0),U,2)
              ALGORITHM:         S X="`"_+$P(^VA(15,D0,0),U,2)
              DESCRIPTION:       This field is used to navigate to the file
              pointed to by RECORD2.

              TECHNICAL DESCR:   This field is used to navigate to the file
                        pointed to by RECORD2.

15,99993      LOOKUP3                ;  COMPUTED

              MUMPS CODE:        S X="`"_D0
              ALGORITHM:         S X="`"_D0
              LAST EDITED:       AUG 08, 1989
              DESCRIPTION:       This computed field provides
                        navigational capability to any file that        points
         to this file and has a DINUM            relationship.

              TECHNICAL DESCR:   This computed field provides
                        navigational capability to any file that
              points to this file and has a DINUM                relationship.
```

5. INTEGRATION REFERENCE #1091

{ XE "DBA Approvals and DBIAs" }

NAME: DBIA316-C   ENTRY: 1091
CUSTODIAL PACKAGE: VA FILEMAN   San Francisco
SUBSCRIBING PACKAGE: TOOLKIT   San Francisco
STATUS: ACTIVE
DURATION: Next Version

DESCRIPTION:

Multi Term Lookup (a component of TOOLKIT) requests the ability to read the "GL" node of ^DIC in order to retrieve a global root. This reference can be found in the routines XTLKEFOP, XTLKKWL, XTLKMGR, XTLKPRT, and in the MUMPS X-REF of file 8984.3 listed below:

CROSS-REFERENCE: 8984.3^AC^MUMPS

```
1)= I $D(^XT(8984.3,DA,0)),$P(^(0),U,2)'="" S J
     L=$P(^(0),U,2),JL=$P(^DIC(JL,0,"GL"),U,2),^XT(8
                    984.3,"AC",JL,$E(X,1,30),DA)="" K JL


2)= I $D(^XT(8984.3,DA,0)),$P(^(0),U,2)'="" S J
     L=$P(^(0),U,2),JL=$P(^DIC(JL,0,"GL"),U,2) K ^XT
                    (8984.3,"AC",JL,$E(X,1,30),DA),JL
```

Associates the synonym with the global root of the lookup file.

* Amendment 1/23/95 *

The above request should be modified to include both Multi-Term Lookup and the Duplicate Resolution modules of Toolkit. The "GL" node is referenced for the same purpose in file 15.1, field .01, "AGL" cross-reference.

6. INTEGRATION REFERENCE #1110

{ XE "DBA Approvals and DBIAs" }

NAME: 1110   ENTRY: 1110
CUSTODIAL PACKAGE: VA FILEMAN   San Francisco
SUBSCRIBING PACKAGE: TOOLKIT   San Francisco
STATUS: ACTIVE
DURATION: Till Otherwise agreed

DESCRIPTION:

Kernel Toolkit needs this agreement with FileMan to be able to clean up some "IX" nodes in the data dictionary of the DUPLICATE RECORD (#15) file. The "IX" nodes which are killed during the post-init contain the names of the cross-references. which do not exist.

GLOBAL REFERENCE:

^DD(15,0,'IX','AMFI',15,999999901)

^DD(15,0,'IX','APOT',15,.04)

^DD(15,0,'IX','AZ1',15,.05)

^DD(15.01101,0,'IX','ARDY',15.01101,.02)

7. INTEGRATION REFERENCE #1111

{ XE "DBA Approvals and DBIAs" }

NAME:	1111	ENTRY:	1111
CUSTODIAL PACKAGE:	VA FILEMAN		San Francisco
SUBSCRIBING PACKAGE:	TOOLKIT		San Francisco
STATUS:	ACTIVE		
DURATION:	Till Otherwise agreed		

DESCRIPTION:

Kernel Toolkit files have a number of fields whose screens, input transforms, and executable helps contain code that directly references ^DD.

GLOBAL REFERENCE:

^DD(15,.01,'V','B')

This node is used in the input transform and in the screen of the DUPLICATE RESOLUTION FILE 15.1. It is used in a variable pointer type field to restrict the user to only those files which have been set up for the merge.

^DD(FILE,FIELD)

These global references are used in displaying the fields that can be compared and assigned a matching value. The 0 node of the field is referenced in order to screen out "computed" and "multi-valued" fields from this display and comparison. One use of these references can be seen in the executable help of field .05, FIELD TO BE CHECKED.

^DD(FILE,FIELD,0)

These global references are used in displaying the fields that can be compared and assigned a matching value. The 0 node of the field is referenced in order to screen out "computed" and "multi-valued" fields from this display and comparison. One use of these references can be seen in the executable help of field .05, FIELD TO BE CHECKED.

8. INTEGRATION REFERENCE #1113

{ XE "DBA Approvals and DBIAs" }

```
                        NAME:  1113              ENTRY:   1113
          CUSTODIAL PACKAGE:  KERNEL                     San Francisco
        SUBSCRIBING PACKAGE:  TOOLKIT                    San Francisco
                      STATUS:  ACTIVE
                    DURATION:  Till Otherwise agreed
```

DESCRIPTION:

Kernel Toolkit needs this agreement with Kernel to reference ^DIC(9.4.

GLOBAL REFERENCE:

```
    ^DIC(9.4,D0,20,D1,0)
         3    NAME OF MERGE ROUTIN  0;3      Direct Global Read

    ^DIC(9.4,D0,20,D1,1)

    ^DIC(9.4,D0,0)
        .01   NAME                          0;1      Read w/Fileman
```

9. INTEGRATION REFERENCE #1124

{ XE "DBA Approvals and DBIAs" }

```
                        NAME:  References to PACKAGE FILE (9.4)
                                                ENTRY:   1124
          CUSTODIAL PACKAGE:  KERNEL (parent)          San Francisco
        SUBSCRIBING PACKAGE:  TOOLKIT                   San Francisco
                      STATUS:  ACTIVE
                    DURATION:  Till Otherwise agreed
```

DESCRIPTION:

^XTSUMBLD, %INDEX, and the XINDEX routines need to look at the
Package file to find out what files are part of the package. For example,

```
>>>>>XTSUMBLD+14 (FIELD: PREFIX)
S X=$P(^DIC(9.4,+$P(Y(0),U,2),0),U,2) D NAME(X) G EXIT:'$D(XTRNAME)


>>>>>XINDX10+11 (FIELD: FILE)
F J=0:0 S J=$O(^DIC(9.4,DA,4,J)) Q:J'>0  I $D(^(J,0))
    SINDFN=+^(0),INDRN="|dd"| _INDFN,(INDF,INDL)=0 D INSERT


>>>>>XINDX11+22 (FIELD: PREFIX) NAMSP
S INDXN=$P(^DIC(9.4,DA,0),"^",2),C9=0,INDXN(C9)="," F A=0:0 S
    A=$O(^DIC(9.4,DA,"EX",A)) Q:A'>0  I $D(^(A,0))#2 S
    C9=C9+1,INDXN(C9)=$P(^(0),"^")
```

```
>>>>>ZINDX10+4 (FIELD: FILE)
F J=0:0 S J=$O(^DIC(9.4,DA,4,J)) Q:J'>0  I $D(^(J,0)) S
INDFN=+^(0),INDRN="|dd"| _INDFN,(INDF,INDL)=0 D INSERT


>>>>>ZINDX11+5 (FIELD: PREFIX) NAMSP
S INDXN=$P(^DIC(9.4,DA,0),"^",2),C9=0,INDXN(C9)="," F A=0:0 S
   A=$O(^DIC(9.4,DA,"EX",A)) Q:A'>0  I $D(^(A,0))#2 S
   C9=C9+1,INDXN(C9)=$P(^(0),"^")
```

GLOBAL REFERENCE:

    ^DIC(9.4,DA,0)
           1   PREFIX   0;2   Direct Global Read

    ^DIC(9.4,DA,4)
           6   *FILE4;0   Direct Global Read

10. INTEGRATION REFERENCE #1125

{ XE "DBA Approvals and DBIAs" }

                      NAME: Index and BUILD file
                              ENTRY: 1125
  CUSTODIAL PACKAGE: KERNEL   San Francisco
SUBSCRIBING PACKAGE: TOOLKIT   San Francisco
                 STATUS: ACTIVE
            DURATION: Till Otherwise agreed

      DESCRIPTION:

Index reads the file list, option list, Function list, routine list to get the components of a build. The references are in XINDX10, XINDX11, XINDX51.

GLOBAL REFERENCE:

    ^XPD(9.6,D0,4
           4   FILE   Direct Global Read

    ^XPD(9.6,D0,'KRN',
           6   BUILD COMPONENTS   Direct Global Read

11. INTEGRATION REFERENCE #1126

{ XE "DBA Approvals and DBIAs" }

NAME: Index and the DD global.

ENTRY: 1126

CUSTODIAL PACKAGE: VA FILEMAN   San Francisco

SUBSCRIBING PACKAGE: TOOLKIT   San Francisco

STATUS: ACTIVE

DURATION: Till Otherwise agreed

DESCRIPTION:

GLOBAL REFERENCE:

^DD(

The VA Cross-Referencer utility in Toolkit needs to reference several ^DD nodes in order to cross-reference a package. Several of the referenced DD nodes contain MUMPS code. They are inspected to find items such as global/variables names and label/external references. Some of the referenced nodes are the "LAYGO", "DEL" nodes. A specific example of a DD reference follows:

```
>>>>>%INDX10+25
S INDEL="" F G=0:0 S INDEL=$O(^DD(INDFN,INDF,"LAYGO",INDEL))
Q:INDEL=""
I $D(^(INDEL,0))#2 S INDC=INDF_"LAYGO"_INDEL_" ; LAYGO CHECK
CODE",INDX=^(0) D ADD
```

The DD references are found in routines %INDX10, %INDX11, %INDX53.

12. INTEGRATION REFERENCE #1129

{ XE "DBA Approvals and DBIAs" }

NAME: DBIA1129-A   ENTRY: 1129

CUSTODIAL PACKAGE: KERNEL (parent)   San Francisco

SUBSCRIBING PACKAGE: TOOLKIT   San Francisco

STATUS: ACTIVE

DURATION: Till Otherwise agreed

DESCRIPTION:

Reference to ^ZZSLOT. Toolkit requests read access to this node to maintain the number of active slots in its performance database.

```
.S XUCMSLOT=+$G(^ZZSLOT(XUCMND,"ACTIVE"))
```

GLOBAL REFERENCE:

^ZZSLOT(nodename,'ACTIVE')
active slots on this node.

13. INTEGRATION REFERENCE #1130

{ XE "DBA Approvals and DBIAs" }

NAME:	DBIA1129-B	ENTRY:	1130
CUSTODIAL PACKAGE:	KERNEL (parent)		San Francisco
SUBSCRIBING PACKAGE:	TOOLKIT		San Francisco
STATUS:	ACTIVE		
DURATION:	Till Otherwise agreed		

DESCRIPTION:

References to ^%ZOSV*

ROUTINE: %ZOSV2

COMPONENT: DB
VARIABLES: XUCM()   Output
Collect data on current database size.

COMPONENT: RTHSTOP
VARIABLES: Stops the current RTHIST session, prepares data for filing by moving to the %ZRTL global, purges ^RTH global in the   MGR account, begins a new RTHIST session.

COMPONENT: $$TRNLNM
VARIABLES: Translates a VMS logical name.

COMPONENT: $$TI
VARIABLES: Returns MSM CPU tic interval.

COMPONENT: $$OS
VARIABLES: Return current operating system and version level.

COMPONENT: $$PRV
VARIABLES: Return current user priv's on VMS systems.

Internal Relations

RELATIONSHIP OF TOOLKIT WITH KERNEL AND VA FILEMAN

Toolkit requires both Kernel V. 7.1 and VA FileMan V. 20.0. Toolkit resides on the Kernel's Systems Manager Menu [EVE].

Any Multi-Term Look-Up option in the OPTION file (#19){ XE "OPTION file" }{ XE "Files:OPTION" }, which is a menu option, is able to run independently provided the user has the appropriate keys.{ XE "Internal Relations" }

NAMESPACING

In production accounts Toolkit follows the namespacing{ XE "Namespacing" } conventions of DHCP primarily using a leading X. Within the X namespace XDR is the Duplicate Resolution Utilities{ XE "Duplicate Resolution Utilities," }, XUCM, and XUCS contain Capacity Management utilities, and XT has a set of tools supporting distinct tasks (e.g., XTLK is the namespace for the Multi-Term Look-Up utility). Toolkit also uses the Z namespace within the production account (e.g., ZIND).

NOTE: For absolute safety it is recommended that ZZ be used in local development.

Package-wide Variables

The Kernel Toolkit does not create any package-wide variables that have received SACC exemptions.

{ XE "Key Variables:DISYS" **}**

SACC Exemptions

The following list describes exemptions from the *Programming Standards and Conventions (SAC)* that currently pertain to Toolkit. The date the exemption was granted is shown in parentheses following the description.**{** XE "SACC Exemptions" **}{** XE "Exemptions, SACC" **}**

- The following globals are exempt from VA FileMan compatibility (8/10/89):

    ^%ZRTL(3
    ^%ZRTL("RTH"

- The Kernel routine ZTEDIT3**{** XE "ZTEDIT3" **}** may SET or KILL the variable DUZ: (6/18/90).

    NOTE: ZTEDIT3 is now a Toolkit Routine.

- Kernel Toolkit may use the following Type A extensions to the 1990 MUMPS Language Standard:

    Merge
    reverse $ORDER/2-arg $O
    $GET with two arguments
    $NAME
    SET $EXTRACT
    missing parameters in calling list
    set $X and $Y
    10K routine size

How to Generate On-Line Documentation

On-line documentation{ XE "How to Generate On-Line Documentation" }{ XE "On-Line Documentation, How to Generate" } about Toolkit may be obtained in a number of ways as described in this chapter.

RETRIEVING ON-LINE HELP USING QUESTION MARKS

The use of question marks at the file and field level is described in the *VA FileMan Technical Manual*. The use of question marks within the menu system invoke help about options and menus. One question mark at the top-level menu prompt displays the items available on the menu. Two question marks shows the Common Menu available to all users as well as any secondary menu options for the current user. Locked options are displayed if the user holds the key. Three question marks displays descriptions of the options from the OPTION file (#19){ XE "OPTION file" }{ XE "Files:OPTION" }. Four question marks displays a help frame if one has been associated with this option in the OPTION file (#19). A question mark followed by the name of an option on the current menu displays a help frame if one has been named for that option in the OPTION file (#19).

PRINT OPTIONS FILE

The Kernel Print Option File option{ XE "Print Option File option [XUPRINT]" } [XUPRINT]{ XE "XUPRINT" } displays a list of namespaced options associated with VA FileMan and the Kernel. Other namespaced entries may also be retrieved from the following files:

PRINT TEMPLATE (#.4){ XE "PRINT TEMPLATE file" }{ XE "Files:PRINT TEMPLATE" }

INPUT TEMPLATE (#.402){ XE "INPUT TEMPLATE file" }{ XE "Files:INPUT TEMPLATE" }

SORT TEMPLATE (#.401){ XE "SORT TEMPLATE file" }{ XE "Files:SORT TEMPLATE" }

SECURITY KEY (#19.1){ XE "SECURITY KEY file" }{ XE "Files:SECURITY KEY" }

FUNCTION (#.5){ XE "FUNCTION file" }{ XE "Files:FUNCTION" }

BULLETIN (#3.6){ XE "BULLETIN file" }{ XE "Files:BULLETIN" }

HELP FRAME (#9.2){ XE "HELP FRAME file" }{ XE "Files:HELP FRAME" }

LIST FILE ATTRIBUTES

The FileMan List File Attributes option{ XE "List File Attributes option [DILIST]" } [DILIST]{ XE "DILIST" } allows the user to generate documentation pertaining to files and file structure{ XE "File Attributes" }. Utilization of this option via the "Standard" format yields the following Data Dictionary information for a specified file(s):

- File name and description.

- Identifiers.

- Cross-references.

- Files pointed to by the file specified.

- Files which point to the file specified.

- Input templates.

- Print templates.

- Sort templates.

In addition, the following applicable data is supplied for each field in the file: field name, number, title, global location, description, help prompt, cross-reference(s), input transform, date last edited, and notes.

Using the "Global Map" format{ XE "Global Map Format" } of this option generates an output which lists all cross-references for the file selected, global location of each field in the file, input templates, print templates, and sort templates.

INQUIRE TO OPTION FILE

The Kernel Inquire{ XE "Inquire option [XUINQUIRE]" } option [XUINQUIRE]{ XE "XUINQUIRE" } provides the following information about a specified option(s):

- Option name.

- Menu text.

- Option description.

- Type of option.

- Lock (if any).

In addition, all items on the menu are listed for each menu option.

To secure information about Multi-Term Look-Up options, the user must specify the name or namespace of the option(s) desired. The namespace associated with the Multi-Term Look-Up package is XTLK**{** XE "Multi-Term Look-Up (MTLU)" **}**.

KERNEL HELP

The Kernel New Features Help**{** XE "Kernel New Features Help option [XUVERSIONNEW-HELP]" **}** option [XUVERSIONNEW-HELP]**{** XE "XUVERSIONNEW-HELP" **}** lists the help frames associated with the Kernel. Extensive information is available and the reader is encouraged to display or print this series of frames.

Checksum Values for Routines

This chapter contains the checksum values for the Toolkit's routines. These values reflect the checksum at the time of the package release. Subsequent changes (patches) to the routines change these values.{ XE "Checksum Values" }

XDRCNT	7651887	XINDX7....................	7575886
XDRDADD	8133407	XINDX8....................	6101428
XDRDADJ	4509269	XINDX9....................	4045898
XDRDCOMP	4431965	XTBASE..................	2331979
XDRDFPD..............	7816795	XTCMFILN.............	4125344
XDRDLIST..............	7786460	XTEDTVXD	1542362
XDRDMAIN	5700890	XTFC0....................	11055774
XDRDOC	19083	XTFC1....................	14547133
XDRDOC1	13351	XTFCE	5859522
XDRDOC2	19767	XTFCE1	6311273
XDRDPDTI	2075925	XTFCR	5587602
XDRDPRGE	3959904	XTFCR1	3692308
XDRDQUE	9275556	XTINEND	5215462
XDRDSCOR	1855732	XTINI001	5950864
XDRDSTAT.............	2676366	XTINI002	4393549
XDRDUP	3547600	XTINI003	6019987
XDREMSG	4302480	XTINI004	4028880
XDRERR	127648	XTINI005	3990558
XDRHLP	2681700	XTINI006	9416677
XDRMADD..............	6382715	XTINI007	9086371
XDRMAIN...............	7563507	XTINI008	8419298
XDRMAINI	14611797	XTINI009	8019911
XDRMPACK...........	2927651	XTINI00A	9113926
XDRMRG	14311248	XTINI00B	11110278
XDRMRG1	1874512	XTINI00C	11151493
XDRMSG................	1827956	XTINI00D	9306443
XDRMVFY	1318075	XTINI00E	8494510
XDRPREI	293004	XTINI00F................	8489467
XDRU1	1782236	XTINI00G	7747693
XINDEX	7227772	XTINI00H	7094018
XINDX1..................	6096231	XTINI00I.................	7643278
XINDX10..............	12585180	XTINI00J	8405097
XINDX11................	7471101	XTINI00K	7198108
XINDX2..................	5054188	XTINI00L................	6651500
XINDX3..................	3897455	XTINI00M...............	8180768
XINDX4..................	4711071	XTINI00N	7132260
XINDX5..................	6259999	XTINI00O	2910462
XINDX51................	9529173	XTINI00P................	7694041
XINDX52................	2298647	XTINI00Q	8160242
XINDX53................	4122188	XTINI00R	9440499
XINDX6................	10179476	XTINI00S................	9016307

XTINI00T	9491800	XTINI027	7165347
XTINI00U	10283373	XTINI028	7867999
XTINI00V	8766708	XTINI029	5902113
XTINI00W	6509886	XTINI02A	7114778
XTINI00X	8595714	XTINI02B	6562588
XTINI00Y	7948819	XTINI02C	5066519
XTINI00Z	1773424	XTINI02D	4746121
XTINI010	7071607	XTINI02E	3747162
XTINI011	5531060	XTINI02F	1763576
XTINI012	7968888	XTINIS	2134872
XTINI013	11142565	XTINIT	11072830
XTINI014	2687098	XTINIT1	5762600
XTINI015	8767076	XTINIT2	5232093
XTINI016	3859202	XTINIT3	16090016
XTINI017	7490625	XTINIT4	3357263
XTINI018	2613367	XTINIT5	1525744
XTINI019	4541347	XTINITY	15382450
XTINI01A	7350290	XTINOK	2394003
XTINI01B	3719011	XTKERM1	5596187
XTINI01C	6289769	XTKERM2	7359658
XTINI01D	1212716	XTKERM3	2782884
XTINI01E	5998915	XTKERM4	5378382
XTINI01F	5482770	XTKERMIT	2016322
XTINI01G	3469421	XTLATSET	6413686
XTINI01H	1876516	XTLKDICL	2562328
XTINI01I	5948679	XTLKEFOP	12288261
XTINI01J	5624949	XTLKKSCH	5117176
XTINI01K	7118498	XTLKKWL	2673960
XTINI01L	5020375	XTLKKWL1	8089076
XTINI01M	6515584	XTLKKWL2	8570562
XTINI01N	7612374	XTLKKWLD	830939
XTINI01O	7804125	XTLKMGR	8218132
XTINI01P	7864176	XTLKPRT	3890354
XTINI01Q	7980433	XTLKPST	561010
XTINI01R	7872517	XTLKTICD	2688040
XTINI01S	7885668	XTLKTOKN	3207127
XTINI01T	8156338	XTLKWIC	2000831
XTINI01U	5743708	XTRCMP	4749536
XTINI01V	8379152	XTRGRPE	342530
XTINI01W	7143097	XTRTHV	6157862
XTINI01X	6494785	XTSPING	258974
XTINI01Y	6468654	XTSUMBLD	10426704
XTINI01Z	6344717	XTVCHG	2433675
XTINI020	6053332	XTVGC1	22093368
XTINI021	6154942	XTVGC1A	6994193
XTINI022	6263758	XTVGC2	20558103
XTINI023	6988435	XTVGC2A	17354751
XTINI024	7095170	XTVGC2A1	9865117
XTINI025	5225531		
XTINI026	6836611		

XTVNUM	7898211	XUCMBR1	5837802
XTVRC1	9444013	XUCMBR2	10844732
XTVRC1A	18908374	XUCMBR3	9625086
XTVRC1Z	573177	XUCMBRTL	8754496
XTVRC2	18916359	XUCMDSL	4295323
XTVRCRES	5210571	XUCMFGI	1467166
XUCIN001	6331531	XUCMFIL	5382924
XUCIN002	7847815	XUCMGRAF	1687213
XUCIN003	5328738	XUCMNI2A	20928196
XUCIN004	5633578	XUCMNIT	11960925
XUCIN005	4016858	XUCMNIT1	7377867
XUCIN006	6384285	XUCMNIT2	16835662
XUCIN007	2842241	XUCMNIT3	5784566
XUCIN008	4454633	XUCMNIT4	11052588
XUCIN009	7054787	XUCMNIT5	4264655
XUCIN00A	3478716	XUCMNT3A	10767827
XUCIN00B	3162587	XUCMPA	7085998
XUCIN00C	4414148	XUCMPA1	7618346
XUCIN00D	5426793	XUCMPA2	6586755
XUCIN00E	6950804	XUCMPA2A	5655040
XUCIN00F	6487754	XUCMPA2B	9904709
XUCIN00G	5536118	XUCMPOST	1750081
XUCIN00H	5595361	XUCMPRE	2500182
XUCIN00I	3636839	XUCMTM	9551796
XUCIN00J	4985882	XUCMTM1	3008863
XUCIN00K	1326743	XUCMVPG	4016494
XUCIN00L	1575674	XUCMVPG1	5894133
XUCIN00M	5562214	XUCMVPI	5930227
XUCIN00N	5268349	XUCMVPM	4086669
XUCIN00O	4317063	XUCMVPM1	11280175
XUCIN00P	5661675	XUCMVPS	6211427
XUCIN00Q	7342486	XUCMVPU	3071852
XUCIN00R	8641639	XUCPCLCT	3573145
XUCIN00S	5853502	XUCPFRMT	13051323
XUCIN00T	5815554	XUCPRAW	13134609
XUCIN00U	6204905	XUCS1E	5744464
XUCIN00V	4353627	XUCS1R	11414218
XUCIN00W	5144510	XUCS1RA	11144520
XUCIN00X	5630258	XUCS1RB	11341248
XUCIN00Y	6331276	XUCS1RBA	6176633
XUCIN00Z	7705187	XUCS2E	5426963
XUCIN010	5146314	XUCS2R	7996923
XUCIN011	2024106	XUCS2RA	6913779
XUCINIS	2173432	XUCS2RB	8006304
XUCINIT	10781726	XUCS2RBA	4179178
XUCINIT1	5752814	XUCS4E	1556880
XUCINIT2	5232654	XUCS4R	11653758
XUCINIT3	16094813	XUCS4RB	9766381
XUCINIT4	3357826		
XUCINIT5	1367458		

XUCS5E	1037983	XURTL	7949393
XUCS5EA	5223554	XURTL1	7623474
XUCS6E	1362981	XURTL2	5911591
XUCS6R	6132484	XURTL3	9463174
XUCS8E	2709944	XURTL4	8083788
XUCS8R	12237493	XURTLC	3647421
XUCS8RB	10517473	XURTLK	5463315
XUCS8RG	5086949	ZINDEX	7934389
XUCS8RGA	4599537	ZINDX1	5876099
XUCSCDE	3642152	ZINDX10	11716270
XUCSCDG	6572594	ZINDX11	6160284
XUCSCDGA	4312009	ZINDX2	4603647
XUCSCDR	9885385	ZINDX3	3896672
XUCSCDRB	8466812	ZINDX4	4546127
XUCSI001	6807214	ZINDX5	6415684
XUCSI002	8095362	ZINDX51	8782796
XUCSI003	7090131	ZINDX52	2299766
XUCSI004	6290195	ZINDX53	4122137
XUCSI005	3935311	ZINDX6	12035964
XUCSI006	4874125	ZINDX8	6760814
XUCSI007	6391003	ZINDX9	4986099
XUCSI008	6245860	ZINDXH	1579327
XUCSI009	6641536	ZTEDIT	11385452
XUCSI00A	7072648	ZTEDIT1	9783719
XUCSI00B	6183955	ZTEDIT2	12580728
XUCSI00C	5840656	ZTEDIT3	9890321
XUCSI00D	5871453	ZTEDIT4	4936626
XUCSI00E	2444351	ZTGS	1511640
XUCSI00F	850326	ZTP1	7893577
XUCSI00G	5117155	ZTPP	7019346
XUCSI00H	7689858	ZTRDEL	959784
XUCSI00I	6887131	ZTRTHV	6018658
XUCSI00J	6573491		
XUCSI00K	6171637		
XUCSI00L	4221793		
XUCSINI1	5671874		
XUCSINI2	5232622		
XUCSINI3	16094695		
XUCSINI4	3357794		
XUCSINI5	628012		
XUCSINIS	2216765		
XUCSINIT	10890951		
XUCSLOAD	6778573		
XUCSPRG	4520058		
XUCSRV	5969322		
XUCSTM	6457738		
XUCSTME	13223145		
XUCSUTL	2837344		
XUCSUTL2	6021611		
XUCSUTL3	11276783		

Security and Keys

The security keys distributed with Toolkit to protect the use of options are described below:

{ XE "Security Keys:XDR" **}**XDR   This key allows access to the Duplicate Resolution options.

{ XE "Security Keys:XDRMGR" **}**XDRMGR   This key allows a user access to the Duplicate Resolution Manager utilities. It should only be given to the people responsible for management of the various Duplicate Resolution packages (e.g., Patient Registration).

{ XE "Security Keys:XTLKZMGR" **}**XTLKZMGR   This is a manager's security key used to lock the set and kill options of the LOCAL LOOKUP file (#8984.4).

{ XE "Security Keys:XUPROG" **}**XTLKZUSER   This security key may optionally be used to lock the XTLKUSER2 menu.

XUPROG   Assign this lock to all users allowed to go into programmer options from the Menu system.

{ XE "Security Keys:XUPROGMODE" **}**XUPROGMODE   This key locks out "Global List" and "Programmer Mode".

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Files and Globals

GLOBAL NAME   FILE #   FILE NAME *

{ XE "Globals and Files:DIZ" **}**DIZ 8980   KERMIT HOLDING**{** XE "Globals and Files:DIZ:8980 KERMIT HOLDING" **}{** XE "KERMIT HOLDING file" **}{** XE "Files:KERMIT HOLDING" **}**

{ XE "Globals and Files:XTV" **}**XTV   8991 XTV ROUTINE CHANGES**{** XE "Globals and Files:XTV:8991 XTV ROUTINE CHANGES" **}{** XE "XTV ROUTINE CHANGES file" **}{** XE "Files:XTV ROUTINE CHANGES" **}**
                    { XE "Globals and Files:XTV:8991.19 XTV VERIFICATION PACKAGE" **}{** XE "XTV VERIFICATION PACKAGE file" **}{** XE "Files:XTV VERIFICATION PACKAGE" **}**8991.19   XTV VERIFICATION PACKAGE
                    8991.2   XTV GLOBAL CHANGES**{** XE "Globals and Files:XTV:8991.2 XTV GLOBAL CHANGES" **}{** XE "XTV GLOBAL CHANGES file" **}{** XE "Files:XTV GLOBAL CHANGES" **}**

{ XE "Globals and Files:VA" **}**VA   **{** XE "Globals and Files:VA:15 DUPLICATE RECORD" **}{** XE "DUPLICATE RECORD file" **}{** XE "Files:DUPLICATE RECORD" **}**15 DUPLICATE RECORD
                    { XE "Globals and Files:VA:15.1 DUPLICATE RESOLUTION" **}{** XE "DUPLICATE RESOLUTION file" **}{** XE "Files:DUPLICATE RESOLUTION" **}**15.1   DUPLICATE RESOLUTION

{ XE "Globals and Files:%ZRTL" **}**%ZRTL   **{** XE "Globals and Files:%ZRTL:3.091 RESPONSE TIME" **}{** XE "RESPONSE TIME file" **}{** XE "Files:RESPONSE TIME" **}**3.091   RESPONSE TIME
                    { XE "Globals and Files:%ZRTL:3.092 RT DATE_UCI,VOL" **}{** XE "RT DATE_UCI,VOL file" **}{** XE "Files:RT DATE_UCI,VOL" **}**3.092   RT DATE_UCI,VOL
                    { XE "Globals and Files:%ZRTL:3.094 RT RAWDATA" **}{** XE "RT RAWDATA file" **}{** XE "Files:RT RAWDATA" **}**%ZRTL:3.094   RT RAWDATA

{ XE "Globals and Files:^XT" **}**^XT **{** XE "Globals and Files:^XT:8984.1 LOCAL KEYWORD" **}{** XE "LOCAL KEYWORD file" **}{** XE "Files:LOCAL KEYWORD" **}**8984.1   LOCAL KEYWORD

{ XE "Globals and Files:^XT:8984.2 LOCAL SHORTCUT" **}{** XE "LOCAL SHORTCUT file" **}{** XE "Files:LOCAL SHORTCUT" **}**8984.2 LOCAL SHORTCUT

{ XE "Globals and Files:^XT:8984.3 LOCAL SYNONYM" **}{** XE "LOCAL SYNONYM file" **}{** XE "Files:LOCAL SYNONYM" **}**8984.3   LOCAL SYNONYM

{ XE "Globals and Files:^XT:8984.4 LOCAL LOOKUP" **}{** XE "LOCAL LOOKUP file" **}{** XE "Files:LOCAL LOOKUP" **}**8984.4   LOCAL LOOKUP

{ XE "Globals and Files:^XUCM" **}**^XUCM   **{** XE "Globals and Files:^XUCM:8986.095 CM SITE PARAMETERS" **}{** XE "CM SITE PARAMETERS file" **}{** XE "Files:CM SITE PARAMETERS" **}**8986.095 CM SITE PARAMETERS

{ XE "Globals and Files:^XUCM:8986.098 CM BERNSTEIN DATA" **}{** XE "CM BERNSTEIN DATA file" **}{** XE "Files:CM BERNSTEIN DATA" **}**8986.098   CM BERNSTEIN DATA

{ XE "Globals and Files:^XUCM:8986.3 CM SITE NODENAMES" **}{** XE "CM SITE NODENAMES file" **}{** XE "Files:CM SITE NODENAMES" **}**8986.3   CM SITE NODENAMES

{ XE "Globals and Files:^XUCM:8986.35 CM SITE DISKDRIVES" **}{** XE "CM SITE DISKDRIVES file" **}{** XE "Files:CM SITE DISKDRIVES" **}**8986.35   CM SITE DISKDRIVES

{ XE "Globals and Files:^XUCM:8986.4 CM METRICS" **}{** XE "CM METRICS file" **}{** XE "Files:CM METRICS" **}**8986.4   CM METRICS

{ XE "Globals and Files:^XUCM:8986.5 CM DISK DRIVE RAW DATA" **}{** XE "CM DISK DRIVE RAW DATA file" **}{** XE "Files:CM DISK DRIVE RAW DATA" **}**8986.5   CM DISK DRIVE RAW DATA

{ XE "Globals and Files:^XUCM:8986.51 CM NODENAME RAW DATA" **}{** XE "CM NODENAME RAW DATA file" **}{** XE "Files:CM NODENAME RAW DATA" **}**8986.51   CM NODENAME RAW DATA

{ XE "Globals and Files:^XUCM:8986.6 CM DAILY STATISTICS" **}{** XE "CM DAILY STATISTICS file" **}{** XE "Files:CM DAILY STATISTICS" **}**8986.6 CM DAILY STATISTICS

^XUCS   8987.1   MSM RTHIST SITE
                           8987.2   MSM RTHIST REPORT DATA

Global Translation

This chapter contains recommendations for journaling and translating Toolkit globals. (Translation is called "Impliciting" when running M/SQL.){ XE "Global Translation" } Also, globals that should exist independently on each CPU are shown. The *Kernel Toolkit Installation Guide V. 7.3* has additional information regarding these issues.

NOTE: It is recommended, but not necessary, that the ^XT global{ XE "Globals:^XT" }{ XE "^XT" } be journalled{ XE "Journaling" }.

Sites using MSM should consult the *486 Cookbook and MSM System Managers Guide* for instructions and recommendations regarding journaling, translation, and replication; the information here may not apply.{ XE "Impliciting" }

TRANSLATION *(or IMPLICIT for M/SQL)*

  Highly Recommended: ^DIZ{ XE "Globals:^DIZ" }{ XE "^DIZ" }   ^VA{ XE "Globals:^VA" }{ XE "^VA" }   ^XTV{ XE "Globals:^XTV" }{ XE "^XTV" }

                                ^XUCM{ XE "Globals:^XUCM" }{ XE "^XUCM" }   ^XT   ^XUCP{ XE "Globals:^XUCP" }{ XE "^XUCP" } ^XUCS{ XE "Globals:^XUCS" }{ XE "^XUCS" }

  Recommended: ^%ZRTL{ XE "Globals:^%ZTER" }{ XE "^%ZTER" }

SEPARATE COPIES ON EACH CPU

  Permissible: (acceptable)   ^%ZRTL{ XE "Globals:^%ZRTL" }{ XE "^%ZRTL" }   (to have separate reports per CPU.)

Journaling is recommended for the ^XT global{ XE "Globals:^XT" }{ XE "^XT" }.

Mapping Routines

Routine mapping is at the discretion of the systems manager. The RTHIST routines{ XE "RTHIST Routines" } provide a method for each site to determine the extent to which certain routines are utilized.{ XE "Routine Mapping" }

The following list is provided only as a recommendation. See the *Kernel Technical Manual* and the *VA FileMan Technical Manual* for recommendations for mapping routines in those packages.

The following routine would be mapped in the Manager account{ XE "Manager account" }:

%ZOSV   (To avoid potential problems, do not map %ZOSV if you are running a version of VAX DSM less than V6.)

Glossary

ACCESS CODE   A code that, along with the verify code, allows the
computer to identify you as a user authorized to gain
access to the computer. Your code is greater than six and
less than twenty characters long; can be numeric,
alphabetic, or a combination of both; and is usually
assigned by a site manager or application coordinator . It
is used by the Kernel's Sign-on/Security system to identify
the user (see Verify Code).

ALERTS   Brief on-line notices that are issued to users as they
complete a cycle through the menu system. Alerts are
designed to provide interactive notification of pending
computing activities, such as the need to reorder supplies
or review a patient's clinical test results. Along with the
alert message is an indication that the View Alerts
common option should be chosen to take further action.

ANS MUMPS   The MUMPS programming language is a standard, that is
an **A**merican **N**ational **S**tandard (ANS). MUMPS stands
for **M**assachusetts **U**tility **M**ulti-**p**rogramming **S**ystem.

ANSI   **A**merican **N**ational **S**tandards **I**nstitute

APPLICATION   In DHCP, software and documentation that support the
PACKAGE   automation of a service, such as Laboratory or Pharmacy
within VA medical centers (see Package). The Kernel is
like an operating system relative to other DHCP
applications.

APPLICATION   The person who writes code for application packages. The
PROGRAMMER   Kernel provides tools to facilitate package development.

APPLICATION   Programmer calls provided by the Kernel for use by
PROGRAMMING   application programmers. APIs allow programmers to
INTERFACE (API)   carry out standard computing activities without needing
to duplicate Kernel utilities in their own packages. 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. A
MUMPS array is a set of nodes referenced by subscripts
which share the same variable name.

AUTO-MENU   An indication to Menu Manager that the current user's menu items should be displayed automatically. When auto-menu is not in effect, the user must enter a question mark at the menu's select prompt to see the list of menu items.

BULLETINS   Electronic mail messages that are automatically delivered by MailMan under certain conditions. For example, a bulletin can be set up to fire when database changes occur, such as adding a record to the file of users. Bulletins are fired by bulletin-type cross-references.

CALLABLE ENTRY   An authorized programmer call that may be used in any
POINT   DHCP application package. The DBA maintains the list of DBIC-approved entry points.

CAPACITY   The process of assessing a system's capacity and
MANAGEMENT   evaluating its efficiency relative to workload in an attempt to optimize system performance. The Kernel Toolkit provides several utilities which aid in the short and long term decision process of hardware and application code optimization.

                   New Capacity Management Utilities have been created to utilize VMS, MUMPS and the latest VA Kernel Utilities. These utilities sample running systems at regular intervals and store a key subset of systems metrics related to configuration, database activity, response time, CPU, memory, and I/O utilization.

COMMON MENU   Options that are available to all users. Entering two question marks at the menu's select prompt displays any secondary menu options available to the signed-on user along with the common options available to all users.

COMPILED MENU   Job-specific information that is kept on each CPU so that
SYSTEM (^XUTL   it is readily available during the user's session. It is stored
GLOBAL)   in the ^XUTL global, which is maintained by the menu system to hold commonly referenced information. The user's place within the menu trees is stored, for example, to enable navigation via menu jumping.

CPT   **C**urrent **P**rocedural **T**erminology

CROSS REFERENCE   An indexing method whereby files can include pre-sorted lists of entries as part of the stored database. Cross-references facilitate look-up and reporting.

DATA

A representation of facts, concepts, or instructions in a formalized manner suitable 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 ATTRIBUTE

A characteristic of a unit of data such as length, value, or method of representation. VA FileMan field definitions specify data attributes.

DATA DICTIONARY

The Data Dictionary is a global containing a description of what kind of data is stored in the global corresponding to a particular file. The data is used internally by FileMan for interpreting and processing files.

A Data Dictionary (DD) contains the definitions of a file's elements (fields or data attributes), relationships 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.

DATABASE

A set of data, consisting of at least one file, that is sufficient for a given purpose. The Kernel database is composed of a number of VA FileMan files.

DBA

Data**b**ase **A**dministrator. In DHCP, the person who monitors namespacing conventions and other procedures that enable various DHCP packages to coexist within an integrated database system.

DBIA

Data**b**ase **I**ntegration **A**greement, a formal understanding between two or more DHCP packages which describes how data is shared or how packages interact. The DBA maintains a list of DBIAs between package developers allowing the use of internal entry points or other package-specific features that are not available to the general programming public.

DBIC

Data**b**ase **I**ntegration **C**ommittee. Within the purview of the DBA, the committee maintains a list of DBIC-approved callable entry points and publishes the list on FORUM for reference by application programmers and verifiers.

DEVICE | A peripheral connected to the host computer, such as a printer, terminal, disk drive, modem, and other types of hardware and equipment associated with a computer. The host files of underlying operating systems may be treated like devices in that they may be written to (e.g., for spooling).

DEVICE HANDLER | The Kernel module that provides a mechanism for accessing peripherals and using them in controlled ways (e.g., user access to printers or other output devices).

DHCP | The **D**ecentralized **H**ospital **C**omputer **P**rogram of the Veterans Health Administration (VHA), Department of Veterans Affairs (VA). DHCP software, developed by VA, is used to support clinical and administrative functions at VA Medical Centers nationwide. It is written in MUMPS and, via the Kernel, runs on all major MUMPS implementations regardless of vendor. DHCP is composed of packages which undergo a verification process to ensure conformity with namespacing and other DHCP standards and conventions.

DICTIONARY | A database of specifications of data and information processing resources. VA FileMan's database of Data Dictionaries is stored in the FILE of files (#1).

DIFROM | VA FileMan utility that gathers all package components and changes them into routines (namespaceI* routines) so that they can be exported and installed in another VA FileMan environment.

DIRECT MODE UTILITY | A programmer 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 *cannot* be used in application package code.

DOUBLE QUOTE (") | A symbol used in front of a Common option's menu text or synonym to select it from the Common menu. For example, the five character string "TBOX" selects the User's Toolbox Common option.

DR STRING	The set of characters used to define the variable DR when calling VA FileMan. Since a series of parameters may be included within quotes as a literal string, the variable's definition is often called the DR string. To define the fields within an edit sequence, for example, the programmer may specify the fields using a DR string rather than an input template.
DUPLICATE RESOLUTION UTILITIES	The Merge Shell was developed by the Indian Health Service (IHS) to support their Multi-Facility Integration project. Duplicate Resolution Utilities provide the functionality of combining duplicate records based on conditions established in customized applications.
DUZ	A local variable holding the user number that identifies the signed-on user.
DUZ(0)	A local variable that holds the File Manager Access Code of the signed-on user.
ELECTRONIC SIGNATURE CODE	A secret password that some users may need to establish in order to sign documents via the computer.
ENTRY	A VA FileMan record. It is uniquely identified by an internal entry number (the .001 field) in a file.
ERROR TRAP	A mechanism to capture system errors and record facts about the computing context such as the local symbol table, last global reference, and routine in use. Operating systems provide tools such as the %ER utility. The Kernel provides a generic error trapping mechanism with use of the ^%ZTER global and ^XTER* routines. Errors can be trapped and, when possible, the user is returned to the menu system.
EXTRINSIC FUNCTION	An extrinsic function is an expression that accepts parameters as input and returns a value as output that can be directly assigned.
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	A 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)	The DHCP's Database Management System (DBMS). The central component of the Kernel that defines the way standard DHCP files are structured and manipulated.
FORCED QUEUING	A device attribute indicating that the device can only accept queued tasks. If a job is sent for foreground processing, the device rejects it and prompts the user to queue the task instead.
FORM	A screen-oriented display (see ScreenMan).
FORUM	The central E-mail system within DHCP. It is used by developers to communicate at a national level about programming and other issues. FORUM is located at the Washington, DC ISC (162-2).
GLOBAL VARIABLE	A variable that is stored on disk (MUMPS usage).
GO-HOME JUMP	A menu jump that returns the user to the Primary menu presented at sign-on. It is specified by entering two up-arrows (^^) at the menu's select prompt. It resembles the rubber band jump but without an option specification after the up-arrows.
HELP FRAMES	Entries in the HELP FRAME file (#9.2) that may be distributed with application packages to provide on-line documentation. Frames may be linked with other related frames to form a nested structure.
HELP PROCESSOR	A Kernel module that provides a system for creating and displaying on-line documentation. It is integrated within the menu system so that help frames associated with options can be displayed with a standard query at the menu's select prompt.
HOOK OR LINK	Non-specific terms referring to ways in which files may be related (via pointer links) or can be accessed (via hooks).
HOST FILE SERVER (HFS)	A procedure available on layered systems whereby a file on the host system can be identified to receive output. It is implemented by the Device Handler's **H**ost **F**ile **S**erver (HFS) device type.

HUNT GROUP	An attribute of an entry in the DEVICE file (#3.5) that allows several devices to be used interchangeably; useful for sending network mail or printing reports. If the first hunt group member is busy, another member may stand in as a substitute.
ICD	**I**nternational **C**lassification of **D**iseases
INDEX (%INDEX)	A Kernel utility used to verify routines and other MUMPS code associated with a package. Checking is done according to current ANSI MUMPS standards and DHCP programming standards (see SAC). This tool can be invoked through an option or from direct mode (>D ^%INDEX).
INIT	Initialization of an application package. INIT* routines are built by VA FileMan's DIFROM and, when run, recreate a set of files and other package components.
INTERNAL ENTRY NUMBER (IEN)	The number used to identify an entry within a file. Every record has a unique internal entry number.
IRM	**I**nformation **R**esource **M**anagement. A service at VA medical centers responsible for computer management and system security.
JUMP START	A logon procedure whereby the user enters the "access code;verify code;option" to go immediately to the target option, indicated by its menu text or synonym. The jump syntax can be used to reach an option within the menu trees by entering "access;verify;^option".
KERMIT	A standard file transfer protocol. It is supported by the Kernel and can be set up as an alternate editor.
KERNEL	A set of DHCP MUMPS software routines that function as an intermediary between the host operating system and the DHCP application packages enabling packages to coexist in a standard OS-independent computing environment. The Kernel provides a standard and consistent user and programmer interface between application packages and the underlying MUMPS implementations.
KEYWORD	A word or phrase used to call up several codes from the reference files in the LOCAL LOOKUP file (#8984.4). One specific code may be called up by several different keywords.

LOCAL LOOKUP FILE	The file into which sites enter selected reference files to be used in the look-up process.
MAIL MESSAGE	An entry in the MESSAGE file (#3.9). The DHCP electronic mail system (MailMan) supports local and remote networking of messages.
MAILMAN	The Kernel module that provides a mechanism for handling electronic communication, whether it is user-oriented mail messages, automatic firing of bulletins, or initiation of server-handled data transmissions.
MANAGER ACCOUNT	A UCI that can be referenced by non-manager accounts such as production accounts. Like a library, the MGR UCI holds percent routines and globals (e.g., ^%ZOSF) for shared use by other UCIs.
MENU	A 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 CYCLE	The process of first visiting a menu option by picking it from a menu's list of choices and then returning to the menu's select prompt. Menu Manager keeps track of information, such as the user's place in the menu trees, according to the completion of a cycle through the menu system.
MENU MANAGER	The Kernel module that controls the presentation of user activities such as menu choices or options. Information about each user's menu choices is stored in the Compiled Menu System, the ^XUTL global, for easy and efficient access.
MENU SYSTEM	The overall Menu Manager logic as it functions within the Kernel framework.
MENU TEMPLATE	An association of options as pathway specifications to reach one or more final destination options. The final options must be executable activities and not merely menus for the template to function. Any user may define user-specific menu templates via the corresponding Common option.

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.
MENU TREES	The menu system's hierarchical tree-like structures that can be traversed or navigated, like pathways, to give users easy access to various options.
MULTI-TERM LOOK-UP (MTLU)	**M**ulti-**T**erm **L**ook-**U**p (MTLU) is an adaptation of a tool developed by the Indian Health Service (IHS) which was made generic by the Albany ISC. Multi-Term Look-Up provides a method of enhancing the look-up capabilities of associated VA FileMan files.
MULTIPLE	A multiple-valued field; a subfile. In many respects, a multiple is structured like a file.
MUMPS (ANSI STANDARD)	A programming language recognized by the **A**merican **N**ational **S**tandards **I**nstitute (ANSI). The acronym MUMPS stands for **M**assachusetts General Hospital **U**tility **M**ulti-**p**rogramming **S**ystem.
NAMESPACING	A convention for naming DHCP package elements. The DBA assigns unique character strings for package developers to use in naming routines, options, and other package elements so that packages may coexist. The DBA also assigns a separate range of file numbers to each package.
NODE	In a tree structure, a point at which subordinate items of data originate. A MUMPS array element is characterized by a name and a unique subscript. Thus the terms: node, array element, and subscripted variable are synonymous. In a global array, each node might have specific fields or "pieces" reserved for data attributes such as name.
OPERATING SYSTEM INDEPENDENCE (OS-INDEPENDENT)	A key goal of DHCP. An insulation from specific features of the underlying operating system that allows application packages to run in different OS environments. The Kernel provides the interface mainly with use of the ^%ZOSF global.

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   The Name field in the OPTION file (#19) (e.g., XUMAINT for the option that has the menu text "Menu Management"). Options are namespaced according to DHCP conventions monitored by the DBA.

PAC   **P**rogrammer **A**ccess **C**ode. An optional user attribute that may function as a second level password into programmer mode.

PACKAGE   The set of programs, files, documentation, help prompts, and installation procedures required for a given software application. A DHCP software environment composed of elements specified via the Kernel's PACKAGE file (#9.4). Elements include files and associated templates, namespaced routines, and namespaced file entries from the OPTION (#19), SECURITY KEY (#19.1), HELP FRAME (#9.2), BULLETIN (#3.6), and FUNCTION (#.5) files. Packages are transported using VA FileMan's DIFROM routine that creates initialization routines to bundle the files and records for export. Installing a package involves the running of the installation routines that create the required software environment. Verified packages include documentation. As public domain software, verified packages may be requested through the Freedom of Information Act (FOIA).

PHANTOM JUMP   Menu jumping in the background. Used by the menu system to check menu pathway restrictions.

POINTER   A relationship between two VA FileMan files that makes navigation possible via the pointer (forward or backward).

PRIMARY MENUS   The list of options presented at sign-on. Each user must have a primary menu in order to sign-on and reach Menu Manager. Users are given primary menus by IRM. This menu should include most of the computing activities the user needs.

PRODUCTION   The UCI where users log on and carry out their work, as
ACCOUNT   opposed to the manager, or library, account.

PROGRAMMER
ACCESS

The ability to use DHCP features reserved for programmers. Having the programmer's at-sign, when DUZ(0)=@, enables programmer access.

PROMPT

The computer interacts with the user by issuing questions called *prompts*, to which the user issues a response.

PROTOCOL

An entry in the PROTOCOL file (#101). Used by the Order Entry/Results Reporting (OE/RR) package to support the ordering of medical tests and other activities. The Kernel includes several protocol-type options for enhanced menu displays within the OE/RR package.

QUEUING

Requesting that a job be processed in the background rather than in the foreground within the current session. Jobs are processed sequentially (first-in, first-out). The Kernel's Task Manager handles the queuing of tasks.

QUEUING
REQUIRED

An option attribute that specifies that the option must be processed by TaskMan (the option can only be queued). The option may be invoked and the job prepared for processing, but the output can only be generated during the specified time periods.

RECORD

A 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).

RESOURCE

A method that enables sequential processing of tasks. The processing is accomplished with a RES device type designed by the application programmer and implemented by IRM. The process is controlled via the RESOURCE file (#3.54).

RETURN

On the computer keyboard, the key located where the carriage return is on an electric typewriter. It is used in DHCP to terminate "reads" and is symbolized by <RET>.

ROUTINE

A program or a sequence of instructions called by a program, that may have some general or frequent use. MUMPS routines are groups of program lines which are saved, loaded, and called as a single unit via a specific name.

RUBBER BAND JUMP	A menu jump used to go out to an option and then return, in a bouncing motion. The syntax of the jump is two up-arrows followed by an option's menu text or synonym (e.g., ^^Print Option File). If the two up-arrows are not followed by an option specification, the user is returned to the primary menu (see Go-home Jump).
SAC	**S**tandards **a**nd **C**onventions. Through a process of verification, DHCP packages are reviewed with respect to SAC guidelines as set forth by the Standards and Conventions Committee (SACC). Package documentation is similarly reviewed in terms of standards set by the Documentation Standards and Conventions Committee (DSCC).
SACC	DHCP's **S**tandards **a**nd **C**onventions **C**ommittee. This Committee is responsible for maintaining the document called the SAC.
SCHEDULING OPTIONS	This is a technique of requesting that TaskMan run an option at a given time, perhaps with a given rescheduling frequency, such as once per week.
SCREENMAN FORMS	A 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 package. Forms are composed of blocks [stored in the BLOCK file (#.404)] and can be regular, full screen pages or smaller, pop-up pages for multiples.
SECONDARY MENUS	Options assigned to individual users to tailor their menu choices. If a user needs a few options in addition to those available on the Primary menu, the options can be assigned as secondary options. To facilitate menu jumping, secondary menus should be specific activities, not elaborate and deep menu trees.
SECURITY KEY	The purpose of Security Keys is to set a layer of protection on the range of computing capabilities available with a particular software package. The availability of options is based on the level of system access granted to each user.
SERVER	An entry in the OPTION file (#19). An automated mail protocol that is activated by sending a message to the server with the "S.server" syntax. A server's activity is specified in the OPTION file (#19) and can be the running of a routine or the placement of data into a file.

SHORTCUT   A word used to call up one specific code from the reference files in the LOCAL LOOKUP file (#8984.4).

SIGN-ON/SECURITY The Kernel module that regulates access to the menu system. It performs a number of checks to determine whether access can be permitted at a particular time. A log of sign-ons is maintained.

SITE MANAGER/
IRM CHIEF   At each site, the individual who is responsible for managing computer systems, installing and maintaining new modules, and serving as liaison to the ISCs.

SPECIAL QUEUING   An option attribute indicating that TaskMan should automatically run the option whenever the system reboots.

SPOOLER   An entry in the DEVICE file (#3.5). It uses the associated operating system's spool facility, whether it is a global, device, or host file. The Kernel manages spooling so that the underlying OS mechanism is transparent. In any environment, the same method can be used to send output to the spooler. The Kernel subsequently transfers the text to the ^XMBS global for subsequent despooling (printing).

                  Spooling (under any system) provides an intermediate storage location for files (or program output) for printing at a later time.

SUBSCRIPT   A symbol that is associated with the name of a set to identify a particular subset or element. In MUMPS, a numeric or string value that: Is enclosed in parentheses, is appended to the name of a local or global variable, and identifies a specific node within an array.

SYNONYM   A field in the OPTION file (#19). Options may be selected by their menu text or synonym (see Menu Text).

                  In the case of Multi-Term Look-Up (MTLU), it is a word used to expand the call-up capability of existing terms in the LOCAL LOOKUP file (#8984.4).

TASKMAN   The Kernel module that schedules and processes background tasks (also called Task Manager).

TEMPLATES	In VA FileMan, a 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).
TIMED-READ	The amount of time the Kernel waits for a user response to an interactive READ command before starting to halt the process (times out).
TOOLKIT	Toolkit is a robust set of tools developed to aid the Decentralized Hospital Computer Program (DHCP) development community, and Information Resources Management (IRM), in writing, testing, and analysis of code. It is a set of generic tools that are used by developers, documenters, verifiers, and packages to support distinct tasks.
	Toolkit provides utilities for the management and definition of development projects. Many of these utilities have been used by the San Francisco Information Systems Center (ISC) for internal management and have proven valuable. Toolkit also includes tools provided by other ISCs based on their proven utility.
TREE STRUCTURE	A term sometimes used to describe the structure of a MUMPS array. This has the same structure as a family tree, with the root at the top, and ancestor nodes arranged below, according to their depth of subscripting. All nodes with one subscript are at the first level, all nodes with two subscripts at the second level, and so on.
TRIGGER	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.
TYPE-AHEAD	A buffer used to store characters that are entered before the corresponding prompt appears. Type-ahead is a shortcut for experienced users who can anticipate an expected sequence of prompts.

UCI   **U**ser **C**lass **I**dentification, a computing area. The MGR UCI is typically the Manager's account, while VAH or ROU may be Production accounts.

UP-ARROW JUMP In the menu system, entering an up-arrow (^) followed by an option name accomplishes a jump to the target option without needing to take the usual steps through the menu pathway.

USER ACCESS   This term is used to refer to a limited level of access to a computer system which is sufficient for using/operating a package, but does not allow programming, modification to data dictionaries, or other operations that require programmer access. Any option, for example, can be locked with the key XUPROGMODE, which means that invoking that option requires programmer access.

           The user's access level determines the degree of computer use and the types of computer programs available. The Systems Manager assigns the user an access level.

USER INTERFACE The way the package is presented to the user such as issuing of prompts, help messages, menu choices, etc. A standard user interface can be achieved by using VA FileMan for data manipulation, the menu system to provide option choices, and VA FileMan's Reader, the ^DIR utility, to present interactive dialogue.

VA FILEMAN   A set of programs used to enter, maintain, access, and manipulate a database management system consisting of files. A package of on-line computer routines written in the MUMPS language which can be used as a stand-alone 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.

VARIABLE	A character, or group of characters, that refer to a value. MUMPS recognizes three types of variables:

1. local variables
2. global variables
3. 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).

VENDOR INDEPENDENCE	A goal of DHCP: To develop a system that does not assume the existence of a particular hardware/software platform supplied by a particular vendor. (See Operating System Independence.)

VERIFICATION	A process of DHCP package review carried out by technical staff not directly involved in the development of the package. Software and associated documentation are reviewed in terms of the *Programming Standards and Conventions (SAC)*.

VERIFY CODE	The Kernel's Sign-on/Security system uses the verify code to validate the user's identity. This is an additional security precaution used in conjunction with the Access Code. Like the Access Code, it is also 6 to 20 characters in length. If entered incorrectly, it does not allow the user to access the computer. To protect the user, both codes are invisible on the terminal screen.

Z EDITOR (^%Z)	A Kernel tool used to edit routines or globals. It can be invoked with an option, or from direct mode after loading a routine with >**X ^%Z**.

ZOSF GLOBAL
(^%ZOSF)

The MUMPS OPERATING SYSTEM file (#.7) is a Manager account global distributed with the Kernel to provide an interface between DHCP application packages and the underlying operating system. This global is built during Kernel installation when running the manager setup routine (ZTMGRSET). The nodes of the global are filled-in with operating system-specific code to enable interaction with the operating system. Nodes in the ^%ZOSF global may be referenced by programmers so that separate versions of the package need not be written for each operating system (see Operating System Independence).

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