



RESOURCE AND PATIENT MANAGEMENT SYSTEM

## **BMXNet40**

ADO.NET Data Access and Connectivity Utilities for RPMS  
including WinForm and EHR Integration Frameworks

**(BMX)**

### **Technical Manual**

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# Table of Contents

<b>1.0</b>	<b>Introduction.....</b>	<b>1</b>
<b>2.0</b>	<b>Orientation .....</b>	<b>2</b>
2.1	System Requirements .....	2
<b>3.0</b>	<b>Routines .....</b>	<b>3</b>
3.1	Routines with Descriptions .....	3
<b>4.0</b>	<b>Files and Tables.....</b>	<b>5</b>
4.1	File List .....	5
4.2	File Access .....	5
4.3	Cross References .....	6
4.4	Table File.....	8
4.5	Client Assembly Information .....	10
<b>5.0</b>	<b>Internal Relations .....</b>	<b>11</b>
<b>6.0</b>	<b>External Relations .....</b>	<b>12</b>
6.1	External Calls.....	12
6.2	Published Entry Points.....	12
6.3	Exported Options .....	12
6.4	Client Components .....	12
<b>7.0</b>	<b>Security Keys.....</b>	<b>14</b>
<b>8.0</b>	<b>Archiving and Purging .....</b>	<b>15</b>
<b>9.0</b>	<b>Generating Online Documentation .....</b>	<b>16</b>
9.1	%INDEX .....	16
9.2	Inquire Option .....	17
9.3	Print Option File .....	17
9.4	List File Attributes .....	17
<b>10.0</b>	<b>SAC Requirements and Exemptions .....</b>	<b>19</b>
<b>11.0</b>	<b>Glossary .....</b>	<b>20</b>
<b>12.0</b>	<b>Contact Information .....</b>	<b>24</b>

## Preface

The purpose of this manual is to provide technical information about the *BMXNet ADO.NET Data Access and Connectivity Utilities for RPMS (BMX)* package. The BMX package is designed to support connectivity and data exchange between .NET applications and the Resource and Patient Management System.

### Change History

The following changes have been made to this document since the last publication.

<b>Date of Change</b>	<b>Location of Revision</b>	<b>Revision</b>
11/06/06	3.1	Added routine BMXPO; associated updates
11/06/06	4.1, 4.2	Added file BMX GUI REPORTS; associated updates
03/07/07 3/14/07	2.1	Changed system requirements from "Cache 5.1" to 5.0.21 or higher Requirement: Windows 2000, 2003, XP with Service Packs installed
03/07/07	6.4	Added Client Components information
10/10/2009	1,2,3,4,6,11	EHR/VueCentric Integration, BMX Monitor APPCONTEXTS

## 1.0 Introduction

BMXNet40 represents a refactoring of BMXNet 2.0 to support Electronic Health Record (EHR)/VueCentric components, multisession connections, new dialogs boxes, and a variety of enhancements. This manual provides Indian Health Service (IHS) site managers with a technical description of the BMXNet routines, files, menus, cross references, globals, and other necessary information required to effectively manage the system. BMX Client Connection Management is introduced in Version 4.0 along with APPCONTEXTS security feature, and minor bug fixes (see the BMXNet ADO.NET Data Access and Connectivity Utilities for RPMS User Manual for additional information).

All routines, files, options, and keys are namespaced starting with the letters “BMX.” The file number range for this package is 90093.1–90093.99.

## 2.0 Orientation

See the Installation Instructions section in the *Installation Guide* for maintenance and implementation information.

## 2.1 System Requirements

- VA FileMan version 22 or higher
- VA Kernel version 8.0 or higher
- Cache version 5.0.21 or higher
- Windows 2000, 2003, XP with Service Packs installed
- Microsoft .NET Framework v2.0.50727 or higher
- EHR/VueCentric 1.1 patch 5 for BMXEHR40.net

## 3.0 Routines

### 3.1 Routines with Descriptions

The following table details routines and their associated descriptions. There are a total of 55 routines.

**Table 3-1: Table of Routines and Descriptions**

<b>Routine</b>	<b>Description</b>
BMXADE1	IHS/OIT/HMW–BMXNet ADO.NET PROVIDER ;
BMXADE2	IHS/OIT/HMW–BMXNet ADO.NET PROVIDER ;
BMXADO	IHS/CIHA/GIS–RPC CALL: GENERATE AN ADO SCHEMA STRING AND DATA SET
BMXADO2	IHS/CIHA/GIS–BMX ADO RECORDSET UTILS
BMXADOF	IHS/CIHA/GIS–RPC CALL FOR EXTENDED FUNCTIONALITY OF BMXNet UTILITIES
BMXADOF1	IHS/CIHA/GIS–RPC CALL FOR EXTENDED FUNCTIONALITY OF BMXNet UTILITIES
BMXADOF2	IHS/CIHA/GIS–RPC CALL FOR EXTENDED FUNCTIONALITY OF BMXNet UTILITIES
BMXADOF D	IHS/CIHA/GIS–RPC CALL FOR EXTENDED FUNCTIONALITY OF BMXNet UTILITIES
BMXADOF S	IHS/CIHA/GIS–RPC CALL FOR EXTENDED FUNCTIONALITY OF BMXNet UTILITIES
BMXADOI	IHS/CIHA/GIS–RPC CALL: GENERATE DATA FOR AN ADO DATASET
BMXADOS	IHS/CIHA/GIS–UPDATE THE BMX ADO SCHEMA FILE
BMXADOS1	IHS/CIHA/GIS–UPDATE THE BMX ADO SCHEMA FILE GUI VERSION
BMXADOV	IHS/CIHA/GIS–RPC CALL: GENERATE DATA FOR AN ADO DATASET
BMXADOV1	IHS/CIHA/GIS–RPC CALL: GENERATE DATA FOR AN ADO DATASET
BMXADOV2	IHS/CIHA/GIS–RPC CALL: GENERATE DATA FOR AN ADO DATASET
BMXADOVJ	IHS/CIHA/GIS–RPC CALL: GENERATE DATA FOR AN ADO DATASET
BMXE01	IHS/OIT/FJE–ENVIRONMENT CHECK FOR BMX 2.0 ;
BMXEHR	IHS/VANGENT/GS – BMX PROTOCOL INTEGRATION FOR EHR/VUECENTRIC
BMXFIND	IHS/OIT/HMW–BMX GENERIC FIND
BMXG	IHS/OIT/HMW–UTIL: GET DATA
BMXGETS	IHS/OIT/HMW–BMX REMOTE PROCEDURE CALLS
BMXMBRK	IHS/OIT/HMW–BMXNet MONITOR
BMXMBRK2	IHS/OIT/HMW–BMXNet MONITOR
BMXMEVN	IHS/OIT/HMW–BMXNet MONITOR
BMXMON	IHS/OIT/HMW–BMXNet MONITOR
BMXMSEC	IHS/OIT/HMW–BMXNet MONITOR

<b>Routine</b>	<b>Description</b>
BMXNTEG	INTEGRITY CHECKER;OCT 31, 2006
BMXPO	IHS/CMI/MAW–Populate AppContext with all Namespaced RPCs
BMXPRS	IHS/OIT/HMW–BMX WINDOWS UTILS
BMXRPC	IHS/OIT/HMW–BMX REMOTE PROCEDURE CALLS
BMXRPC1	IHS/OIT/HMW–UTIL: REMOTE PROCEDURE CALLS
BMXRPC2	IHS/OIT/HMW–FIELD LIST
BMXRPC3	IHS/OIT/HMW–BMX REMOTE PROCEDURE CALLS
BMXRPC4	IHS/OIT/HMW–BMX REMOTE PROCEDURE CALLS
BMXRPC5	IHS/OIT/HMW–BMX REMOTE PROCEDURE CALLS
BMXRPC6	IHS/OIT/HMW–BMX REMOTE PROCEDURE CALLS
BMXRPC7	IHS/OIT/HMW–BMX REMOTE PROCEDURE CALLS
BMXRPC8	IHS/OIT/HMW–BMX REMOTE PROCEDURE CALLS
BMXRPC9	IHS/OIT/HMW–RPC CALL FOR EXTENDED BROKER FUNCTIONALITY
BMXRPC10	IHS/ VANGENT/GS –RPC CALL FOR EXTENDED BROKER FUNCTIONALITY
BMXSQL	IHS/OIT/HMW–BMX REMOTE PROCEDURE CALLS
BMXSQL1	IHS/OIT/HMW–BMX REMOTE PROCEDURE CALLS
BMXSQL2	IHS/OIT/HMW–BMX REMOTE PROCEDURE CALLS
BMXSQL3	IHS/OIT/HMW–BMX REMOTE PROCEDURE CALLS
BMXSQL4	IHS/OIT/HMW–BMX REMOTE PROCEDURE CALLS
BMXSQL5	IHS/OIT/HMW–BMX REMOTE PROCEDURE CALLS
BMXSQL6	IHS/OIT/HMW–BMX REMOTE PROCEDURE CALLS
BMXSQL7	IHS/OIT/HMW–BMX REMOTE PROCEDURE CALLS
BMXSQL91	IHS/OIT/HMW–BMX REMOTE PROCEDURE CALLS
BMXTABLE	IHS/OIT/HMW–BMX RETURN ENTIRE TABLE
BMXTRS	IHS/OIT/HMW–UPPERCASE-LOWERCASE
BMXUTL1	IHS/OIT/HMW–UTIL: PATIENT DEMOGRAPHICS
BMXUTL2	IHS/OIT/HMW–UTIL: PATIENT INFO
BMXUTL5	IHS/OIT/HMW–DATE FORMAT
BMXUTL6	IHS/OIT/HMW–BMXNET INSTALLATION CALLS

## 4.0 Files and Tables

The following tables include information regarding file lists and file access.

### 4.1 File List

The following table details file numbers and names.

**Table 4-1: Table of File List Information**

File Number	File Name
90093.1	BMX USER
90093.2	BMX APPLICATION
90093.5	BMXNET MONITOR
90093.9	BMX GUI REPORT
90093.98	BMX ADO LOG
90093.99	BMX ADO SCHEMA

### 4.2 File Access

The following table lists file access information.

**Table 4-2: Table of File Access Information**

FILENAME	FILE (#)	GL	RD	WR	LYG	DD	DEL
BMX USER	90093.1	^BMXUSER(	@	@	@	@	@
BMX APPLICATION	90093.2	^BMXAPPL(	@	@	@	@	@
BMXNET MONITOR	90093.5	^BMXMON(	#	#	#	@	#
BMX GUI REPORT	90093.9	^BMXGUIR(	@	@	@	@	@
BMX ADO LOG	90093.98	^BMXADOL(	@	@	@	@	@
BMX ADO SCHEMA	90093.99	^BMXADO(	@	@	@	@	@



### 4.3 Cross References

The BMX files all use the standard “B” cross reference as defined by FileMan. One additional cross reference is used in the BMX GUI REPORT file.

The PACKAGE field has a MUMPS cross reference to identify the package specifics of the report. The AUSRP cross reference identifies the cross reference as: ^BMXGUIR(“AUSR,” User Pointer, Package Pointer, Inverse Start Date/Time, Record IEN). The following example shows how cross references may appear on your computer screen.

FILE: BMX USER				
GLOBAL: ^BMXUSER(				
FILE #: 90093.1				
FIELD #	FIELD NAME	SUBSCRIPT	PIECE TYPE	
=====				
.01	WINIDENT	D0,0	1	F
	X: B			
	1) S ^BMXUSER("B", \$E(X,1,30),DA)=" "			
.02	USER	"	2	P
.03	V ENCRYPTED	"	3	F
FILE: BMX APPLICATION				
GLOBAL: ^BMXAPPL(				
FILE #: 90093.2				
FIELD #	FIELD NAME	SUBSCRIPT	PIECE TYPE	
=====				
.01	MAJOR VERSION	D0,0	1	F
	X: B			
	1) S ^BMXAPPL("B", \$E(X,1,30),DA)=" "			
.02	MINOR VERSION	"	2	F
.03	BUILD	"	3	D
FILE: BMXNET MONITOR				
GLOBAL: ^BMXMON(				
FILE #: 90093.5				
FIELD #	FIELD NAME	SUBSCRIPT	PIECE TYPE	
=====				
.01	PORT	D0,0	1	N
	X: B			
	1) S ^BMXMON("B", \$E(X,1,30),DA)=" "			
.02	ENABLED	"	2	S
.03	INTEGRATED SECURITY	"	3	S
.04	SESSION NAMESPACE	"	4	F
FILE: BMX GUI REPORT				
GLOBAL: ^BMXGUIR(				

FILE #: 90093.9				
FIELD #	FIELD NAME	SUBSCRIPT	PIECE TYPE	
.01	NAME X: B 1) S ^BMXGUIR("B", \$E(X,1,30),DA)=" "	D0,0	1	F
.02	USER WHO REQUESTED REPORT	"	2	P
.03	START TIME	"	3	D
.04	END TIME	"	4	D
.05	OUTPUT TYPE	"	5	S
.06	OPTION NAME	"	6	F
.07	REPORT STATUS	"	7	S
.08	PACKAGE X: AUSRP^MUMPS 1) S ^BMXGUIR("AUSRP", \$P(^BMXGUIR(DA,0), "^", 2), X, (9999999.9999-\$P(^BMXGUIR(DA,0), "^", 3)), DA)=" "	"	8	P
1100	OUTPUT (90093.911)			
.01	OUTPUT	D0,11,D1,0	1	W
FILE: BMX ADO LOG GLOBAL: ^BMXADOL( FILE #: 90093.98				
FIELD #	FIELD NAME	SUBSCRIPT	PIECE TYPE	
.01	TRANSACTION TIMESTAMP X: B 1) S ^BMXADOL("B", \$E(X,1,30),DA)=" "	D0,0	1	D
.02	FILE NUMBER	"	2	F
.03	DAS	"	3	F
1	DATA (90093.981)			
.01	DATA	D0,1,D1,0	1	W
FILE: BMX ADO SCHEMA GLOBAL: ^BMXADO( FILE #: 90093.99				
FIELD #	FIELD NAME	SUBSCRIPT	PIECE TYPE	
.01	SCHEMA NAME X: B 1) S ^BMXADO("B", \$E(X,1,30),DA)=" "	D0,0	1	F
.02	FILE OR SUBFILE NUMBER	"	2	N
.03	DATASET IS READ ONLY	"	3	S
1	FIELD NUMBER (90093.991)			
.01	FIELD NUMBER X: B 1) S ^BMXADO(DA(1), 1, "B", \$E(X,1,30),DA)=" "	D0,1,D1,0	1	F

.02	DATA TYPE	"	2	S
.03	FIELD LENGTH	"	3	F
.04	COLUMN HEADER	"	4	F
.05	READ ONLY	"	5	S
.06	KEY FIELD	"	6	S
.07	NULL ALLOWED	"	7	S
.08	IEN AUTOMATICALLY INCLUDED	"	8	S
.09	ALWAYS GET INTERNAL VALUE	"	9	S
1	AUTO IDENTIFIER EXTR FUNCT	D0,1,D1,1	E1,240	F
2	SPECIAL UPDATE EP	D0,1,D1,2	E1,245	F
3	EXTR FUNCT FOR TRIGGERED VALU	D0,1,D1,3	E1,245	F
	E			
2	VIEW (90093.992)			
.01	VIEW	D0,2,D1,0	1	F
	X: B			
	1) S ^BMXADO(DA(1),2,"B", \$E(X,1,30),DA)=" "			
1	ENTRY POINT	D0,2,D1,1	E1,240	F
2	PARAMETER (90093.9922)			
.01	PARAMETER	D0,2,D1,2,D2,0	1	F
	X: B			
	1) S ^BMXADO(DA(2),2,DA(1),2,"B", \$E(X,1,30),DA)=" "			
.02	BRIEF DESCRIPTION	"	2	F
3	DESCRIPTION (90093.9923)			
.01	DESCRIPTION	D0,2,D1,3,D2,0	1	W

Figure 4-3: Sample of cross reference screens

## 4.4 Table File

Please see the following example screens of a Table File.

FILE: BMX USER			
GLOBAL: ^BMXUSER(			
FILE #: 90093.1			
FIELD #	FIELD NAME	SUBSCRIPT	PIECE TYPE
=====			
.01	WINIDENT	D0,0	1 F
.02	USER	"	2 P
.03	V ENCRYPTED	"	3 F
FILE: BMX APPLICATION			
GLOBAL: ^BMXAPPL(			
FILE #: 90093.2			
FIELD #	FIELD NAME	SUBSCRIPT	PIECE TYPE
=====			
.01	MAJOR VERSION	D0,0	1 F
.02	MINOR VERSION	"	2 F
.03	BUILD	"	3 D

```

                                FILE: BMXNET MONITOR
                                GLOBAL: ^BMXMON(
                                FILE #: 90093.5
=====
FIELD #      FIELD NAME                SUBSCRIPT                PIECE TYPE
=====
.01          PORT                      D0,0                    1    N
.02          ENABLED                   "                        2    S
.03          INTEGRATED SECURITY        "                        3    S
.04          SESSION NAMESPACE         "                        4    F
1           APPCONTEXTS (90093.51)
  .01        APPCONTEXT                 D0,1,D1,0              1    P
=====
                                FILE: BMX ADO SCHEMA
                                GLOBAL: ^BMXADO(
                                FILE #: 90093.99
=====
FIELD #      FIELD NAME                SUBSCRIPT                PIECE TYPE
=====
.01          SCHEMA NAME                D0,0                    1    F
.02          FILE OR SUBFILE NUMBER     "                        2    N
.03          DATASET IS READ ONLY       "                        3    S
1           FIELD NUMBER (90093.991)
  .01        FIELD NUMBER                D0,1,D1,0              1    F
  .02        DATA TYPE                  "                        2    S
  .03        FIELD LENGTH                 "                        3    F
  .04        COLUMN HEADER               "                        4    F
  .05        READ ONLY                   "                        5    S
  .06        KEY FIELD                    "                        6    S
  .07        NULL ALLOWED                 "                        7    S
  .08        IEN AUTOMATICALLY INCLUDED  "                        8    S
  .09        ALWAYS GET INTERNAL VALUE   "                        9    S
1           AUTO IDENTIFIER EXTR FUNCT  D0,1,D1,1              E1,240 F
2           SPECIAL UPDATE EP           D0,1,D1,2              E1,245 F
3           EXTR FUNCT FOR TRIGGERED VALU D0,1,D1,3              E1,245 F
           E
2           VIEW (90093.992)
  .01        VIEW                        D0,2,D1,0              1    F
1           ENTRY POINT                 D0,2,D1,1              E1,240 F
2           PARAMETER (90093.9922)
  .01        PARAMETER                   D0,2,D1,2,D2,0         1    F
  .02        BRIEF DESCRIPTION           "                        2    F
3           DESCRIPTION (90093.9923)
  .01        DESCRIPTION                 D0,2,D1,3,D2,0         1    W
2           SPECIAL UPDATE EP           D0,1,D1,2              E1,245 F
    
```

Figure 4-4: Sample of table file screens

## 4.5 Client Assembly Information

Three run-time assemblies are furnished with this application: the core BMXNET40.dll file and framework library files for either the Windows Client (BMXWIN40.dll) or the EHR/VueCentric (BMXEHR40.dll) lib directory. The attributes can be found by highlighting the assemblies and right-clicking on the file. The following information represents the released version of the assembly and can be found under the Version tab of the Properties menu.

**Table 4-3: Table of BMXNET40.dll assembly information**

<b>BMXNET40.dll Version and Assembly Information</b>	
Assembly Version	4.0.0.1
Comments	ADO.NET 2.0/Context Core Library for RPMS
Company	Indian Health Service (IHS)
File Version	4.0.0.1
Internal Name	BMXNET40.dll
Language	Language Neutral
Original File Name	BMXNET40.dll
Product Version	4.0.0.1

**Table 4-4: Table of BMXWIN40.dll assembly information**

<b>BMXWIN40.dll Version and Assembly Information</b>	
Assembly Version	4.0.0.1
Comments	WinForm framework for BMX-based applications
Company	Indian Health Service (IHS)
File Version	4.0.0.1
Internal Name	BMXWIN40.dll
Language	Language Neutral
Original File Name	BMXWIN40.dll
Product Version	4.0.0.1

**Table 4-5: Table of BMXEHR40.dll assembly information**

<b>BMXEHR40.dll Version and Assembly Information</b>	
Assembly Version	4.0.0.1
Comments	EHR/VueCentric single-sign on adaptor for BMX
Company	Indian Health Service (IHS)
File Version	4.0.0.1
Internal Name	BMXEHR40.dll
Language	Language Neutral
Original File Name	BMXEHR40.dll
Product Version	4.0.0.1

## 5.0 Internal Relations

There are no internal relations in the BMXNet package.

## 6.0 External Relations

### 6.1 External Calls

There are no external calls in the BMXNet package.

### 6.2 Published Entry Points

There are no published entry points in BMXNet.

### 6.3 Exported Options

Please see the following table for option names and descriptions.

**Table 6-1: Table of exported options information**

Option Name	Description
BMX MONITOR EDIT	Blank Community/City Report
BMX MONITOR START	Use this option to start or restart all BMXNet monitors in the BMXNET MONITOR file. This option should be scheduled as a STARTUP type option in TaskMan. Do not use this option to start a specific monitor. To do this, in programmer mode, do STRT^BMXMON(PORT). See the product documentation for instructions on how to start session monitors in a particular namespace and on how to enable or disable Windows Integrated Security.
BMX MONITOR STOP	Use this option to stop all BMXNet monitors.
BMXMENU	Menu contains options in the BMX namespace
BMXRPC	All BMXNet users must have access to this option.

### 6.4 Client Components

The BMXNET BMXNET40.dll, BMXWIN40.dll, and BMXEHR40.dll libraries are exported by the package for the development in applications. Assemblies are targeted to .NET Framework 2.0 for the development of WinForm client applications or EHR/VueCentric components. The BMXNET40.dll has been *obfuscated* to protect sensitive source code. The object is written in C# using Visual Studio 2008 IDE. There are no additional dependencies. There are no third-party controls used to create the BMXNET assemblies.

**Visual Studio 2008 IDE**

- Microsoft Visual Studio 2008 Version 8.0.50727.762 (SP.050727-7600)

**BMXNET40.dll, BMXEHR40.dll, BMXWIN40.dll**

- Machine Intel 386
- Characteristics
  - The file is a .NET Assembly
  - Line numbers stripped from file
  - Local symbols stripped from file
- Operating System 32-bit/64-bit Windows XP or later
- .NET Framework v2.0 or later
- File Type: Dynamic Linked Library (dll)



## 7.0 Security Keys

Security key information includes the key name and description as shown in the following table.

**Table 7-1: Table of security key information**

<b>Key Name</b>	<b>Description</b>
BMXZMENU	All BMXNet managers must have access to this option.

## 8.0 Archiving and Purging

No archiving or purging is necessary with BMXNet.

## 9.0 Generating Online Documentation

This section describes a few methods to generate BMXNet system technical documentation. Online BMXNet software technical documentation, in addition to that which is located in the Help prompts throughout the BMXNet package, can be generated through the use of several Kernel options. These include, but are not limited to, the following:

- %INDEX
- Menu Management
- Inquire Option
- Print Option File
- VA FileMan
- Data Dictionary Utilities
- List File Attributes

Typing a question mark (?) at the “Select . . . Option” prompt will provide online technical information.

- A single question mark (?) lists all options that can be accessed from the current option.
- Two question marks (??) list all options accessible from the current one, showing the formal name and lock for each.
- Three question marks (???) display a brief description for each option in a menu.
- An option name preceded by a question mark (?**OPTION**) shows extended help, if available, for that option.

For a more exhaustive option listing and further information about other utilities that supply online technical information, consult the DHCP Kernel Reference manual.

### 9.1 %INDEX

This option analyzes the structure of a routine to determine in part if the routine adheres to RPMS programming standards. The %INDEX output can include the following components:

- Compiled list of errors and warnings
- Routine listing

- Local variables
- Global variables
- Naked globals
- Label references
- External references

Running %INDEX for a specified set of routines allows users to discover any deviations from RPMS programming standards that exist in the selected routines and to see how routines interact with one another (i.e., which routines call or are called by other routines).

To run %INDEX for the BMXNet package, type the BMX namespace at the “Routine(s)?” prompt.

## 9.2 Inquire Option

This menu management option provides the following information about a specified option:

- 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 BMXNet options, specify the BMX namespace.

## 9.3 Print Option File

This utility generates a listing of options from the Option file (#19). Users can choose to print all entries in this file or specify a single option or range of options. For a list of BMXNet options, refer to Section 6.3 of this manual.

## 9.4 List File Attributes

This VA FileMan option allows users to generate documentation pertaining to files and file structure. Using the standard format of this option yields the following data dictionary information for a specified file:

- File name and description
- Identifiers
- Cross-references
- Files pointed to by the file specified
- Files that point to the file specified
- Input, print, and sort templates

In addition, the following applicable data is supplied for each field in the file:

- Field name, number, title, and description
- Global location
- Help prompt
- Cross-references
- Input transform
- Date last edited
- Notes

Using the Global Map format of this option generates an output that lists the following information:

- All cross-references for the file selected
- Global location of each field in the file
- Input, print, and sort templates

For a comprehensive listing of BMXNet package files, please refer to Section 4.0 of this manual.

## 10.0 SAC Requirements and Exemptions

Applicable standards are listed in the following table.

**Table 10-1: Table of standards and descriptions**

Standard Number	Description
2.2.3.1.4	SET DUZ
2.2.3.2.5.1	Use of ^TMP(\$J
2.2.3.3.2	Intrinsic Variables direct use is prohibited
2.2.4.3	CLOSE, direct use prohibited
2.2.4.4	HALT command
2.2.4.5	JOB, direct use prohibited
2.2.4.9	OPEN, is prohibited

### Reasons for Exemption

BMXNet is a system level utility that mediates connections between *.NET* applications and the RPMS environment. As such, BMXNet requires the ability to directly *open* and *close* TCP/IP socket connections, access intrinsic variables, manipulate DUZ and its descendants, and directly invoke the JOB and HALT commands. The ^TMP( is used without \$J subscript to temporarily store data to support asynchronous RPC calls that span jobs.

## 11.0 Glossary

### **ADO.NET**

Set of classes that expose data access services to the .NET programmer.

### **API**

Application Program Interface. Callable entry points that enable software to communicate with other software.

### **AppContext**

See Application Context.

### **Application Context**

The Application Context is a read/write part of application programs that contains rules dictating how the application interacts with other applications and users. Application Contexts is implemented in RPMS as an option.

### **BMXNet**

A set of software utilities designed to connect to RPMS data by .NET applications.

### **EHR/VueCentric**

Sign-sign on application used by IHS as the primary EHR. The VueCentric framework is the underlining COM-based technology that supports component deployment, layout, communications, and management.

### **column\_alias**

Specifies an alternative name to replace the column name in the query result set. For example, an alias such as “Quantity,” “Quantity to Date,” or “Qty” can be specified for a column named “quantity.”

### **field\_name**

Specifies from which field (column) the FROM clause should return. The field\_name is associated with the preceding table\_name by using a dot (.) between the two.

**FROM Keyword**

Specifies that the system should return the values from the following table\_list statement.

**INDEX Keyword**

Identifies a specific FileMan cross-reference to use when retrieving data. Always use the SHOWPLAN keyword in conjunction with the INDEX keyword to ensure that the intended result is achieved.

**Index Row**

Part of the SHOWPLAN results that includes the M code created by BMXNet that will execute on the RPMS server and iterate through the FileMan file.

**Iterate**

To say or perform again; repeat.

**join\_type**

Specifies a join using nonstandard syntax and the WHERE clause. The =\* operator is used to specify a One-to-many (OTM) join. Use the OTM join to express relationship between Tables A and B such that a record in Table A can be referenced by a FileMan pointer field in one or more records in Table B.

**Log on**

Connect to a network

**M**

A programming language that originated from the medical sector but is currently used in a variety of database applications due to its retrieval capabilities.

**M Routines**

A collection of command lines, all associated with a single name that can be stored and retrieved as a unit.

**MAXRECORDS Keyword**

Specifies the maximum number of records to return.



**Operator**

A symbol that specifies which operation the systems should perform relative to the indicated operator arguments.

**Operator Arguments**

A value or expression dictating the information upon which the related operator acts.

**Overloads**

The creation of more than one procedure, instance constructor, or property in a class with the same name but different argument types. Overloading is especially useful when your object model dictates that you employ identical names for procedures that operate on different data types.

**Parameter**

A value given to a variable until the related operation is completed. Parameters are treated by the system as constants. Parameters are often used to customize a program for a particular purpose.

**Port**

Software that links one computer with another using TCP/IP address and port numbers assigned by network administrators.

**primary\_table\_name**

The file from which the system should first retrieve data.

**related\_table\_name**

The file from which the system should receive data that matches the primary table.

**Remote Procedure Call (RPC)**

A technique used to constructing distributed, client-server based applications. RPC extends the capabilities of local procedure calling so that the called procedure need not exist in the same address space as the calling procedure.

**Screen Rows**

Part of the SHOWPLAN results that includes the M code that BMXNet will execute to filter the results. The caret (^) character in the query plan is replaced by the tilde (~) character.

**search\_condition**

Restricts the rows returned in the result set by using predicates. There is no limit to the number of predicates that can be included in a search condition.

**SELECT Keyword**

Specifies that the system should return the values by the following `select_list` statement.

**select\_list**

Specifies which fields (columns) the system should select for the returned set. The `select_list` a series of expressions separated by commas.

**Server**

A computer that hosts RPMS applications.

**SHOWPLAN Keyword**

Returns the query plan, including the M code that will be executed to retrieve the records.

**table\_name**

Specifies from which files (tables) the FROM clause should return fields.

**table\_source**

Specifies from which files (tables) the FROM clause should return fields.

**WHERE Keyword**

Specifies a search condition to restrict the rows returned.

## 12.0 Contact Information

If you have any questions or comments regarding this distribution, please contact the OIT Help Desk (IHS).

**Phone:** (505) 248-4371 or (888) 830-7280 (toll free)

**Fax:** (505) 248-4363

**Web:** <http://www.ihs.gov/GeneralWeb/HelpCenter/Helpdesk/index.cfm>

**Email:** [support@ihs.gov](mailto:support@ihs.gov)