



**RPC BROKER  
INSTALLATION GUIDE**

Version 1.1; Patch XWB\*1.1\*47

September 1997

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Department of Veterans Affairs (VA)  
Office of Information & Technology (OI&T)  
Common Services (CS)



# Revision History

## Documentation Revisions

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

**Table i: Documentation revision history**

Date	Revision	Description	Author(s)
09/97	1.0	Initial RPC Broker Version 1.1 software release.	Thom Blom and Joel Ivey, Oakland Office of Information Field Office (OIFO)
04/08/02	2.0	Revised Version for RPC Broker Patch XWB*1.1*13.	Thom Blom and Joel Ivey, Oakland OIFO
05/08/02	3.0	Revised Version for RPC Broker Patch XWB*1.1*26.	Thom Blom and Joel Ivey, Oakland OIFO
02/28/05	4.0	<p>Revised Version for RPC Broker Patches XWB*1.1*35 and 40.</p> <p>Also, reviewed document and edited for the "Data Scrubbing" and the "PDF 508 Compliance" projects.</p> <p><b>Data Scrubbing</b>—Changed all patient/user TEST data to conform to standards and conventions as indicated below:</p> <ul style="list-style-type: none"> <li>• The first three digits (prefix) of any Social Security Numbers (SSN) start with "000" or "666."</li> <li>• Patient or user names are formatted as follows: NHEPATIENT,[N] or NHEUSER,[N] respectively, where the N is a number written out and incremented with each new entry (e.g., NHEPATIENT, ONE, NHEPATIENT, TWO, etc.).</li> <li>• Other personal demographic-related data (e.g., addresses, phones, IP addresses, etc.) were also changed to be generic.</li> </ul> <p><b>PDF 508 Compliance</b>—The final PDF document was recreated and now supports the minimum requirements to be 508 compliant (i.e., accessibility tags, language selection, alternate text for all</p>	Thom Blom and Joel Ivey, Oakland OIFO

## Revision History

Date	Revision	Description	Author(s)
		images/icons, fully functional Web links, successfully passed Adobe Acrobat Quick Check).	
07/03/08	4.1	<p>Updates for RPC Broker Patch XWB*1.1*47:</p> <ul style="list-style-type: none"><li>• No content changes required; no new public classes, methods, or properties added to those available in XWB*1.1*40.</li><li>• Bug fixes to the ValidAppHandle function and fixed memory leaks.</li><li>• Support added for Delphi 2005, 2006, and 2007.</li><li>• Reformatted document.</li><li>• Changed references from Patch 40 to Patch 47 where appropriate.</li></ul>	<p>Common Services (CS) Development Team Oakland, CA OIFO:</p> <ul style="list-style-type: none"><li>• Project Manager—Jack Schram</li><li>• Developer—Joel Ivey</li><li>• SQA—Gurbir Singh</li><li>• Technical Writer—Thom Blom</li></ul>

## Patch Revisions

For the current patch history related to this software, please refer to the Patch Module on FORUM.

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- Common Services (CS) Program—Sri Lingamaneni
- CS Project Manager—Jack Schram
- Developer—Joel Ivey
- Software Quality Assurance (SQA)—Gurbir Singh
- Technical Writer—Thom Blom

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- Computerized Patient Record System (CPRS) Development Team

## Acknowledgements

# Orientation

## How to Use this Manual




Throughout this manual, advice and instructions are offered regarding the use of the RPC Broker V. 1.1 and the functionality it provides for Veterans Health Information Systems and Technology Architecture (VistA).

There are no special legal requirements involved in the use of the RPC Broker.

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

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

**Table ii: Documentation symbol descriptions**

Symbol	Description
	<b>NOTE/REF:</b> Used to inform the reader of general information including references to additional reading material
	<b>CAUTION/DISCLAIMER:</b> Used to caution the reader to take special notice of critical information
	<b>VIRGIN INSTALLATION:</b> Used to denote Virgin installation instructions only.

- Descriptive text is presented in a proportional font (as represented by this font).
- Conventions for displaying TEST data in this document are as follows:
  - The first three digits (prefix) of any Social Security Numbers (SSN) will begin with either "000" or "666."
  - Patient and user names will be formatted as follows: [Application Name]PATIENT,[N] and [Application Name]USER,[N] respectively, where "Application Name" is defined in the Approved Application Abbreviations document and "N" represents the first name as a number spelled out and incremented with each new entry. For example, in Kernel (KRN) test patient and user names would be documented as follows: KRNPATIENT,ONE; KRNPATIENT,TWO; KRNPATIENT,THREE; etc.

- Sample HL7 messages, "snapshots" of computer online displays (i.e., character-based screen captures/dialogues) and computer source code are shown in a *non*-proportional font and enclosed within a box. Also included are Graphical User Interface (GUI) Microsoft Windows images (i.e., dialogues or forms).

Also included are Graphical User Interface (GUI) Microsoft Windows images (i.e., dialogues or forms).

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




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

- All uppercase is reserved for the representation of M code, variable names, or the formal name of options, field and file names, and security keys (e.g., the XUPROGMODE key).
- Object Pascal code uses a combination of upper- and lowercase characters. All Object Pascal reserved words are in boldface.

## Commonly Used Terms

The following is a list of terms and their descriptions that you may find helpful while reading the RPC Broker documentation:

**Table iii: Commonly used RPC Broker terms**

Term	Description
<b>Client</b>	A single term used interchangeably to refer to a user, the workstation (i.e., PC), and the portion of the program that runs on the workstation.
<b>Component</b>	A software object that contains data and code. A component may or may not be visible.   <b>REF:</b> For a more detailed description, please refer to the <i>Borland Delphi for Windows User Guide</i> .
<b>GUI</b>	The Graphical User Interface application that is developed for the client workstation.
<b>Host</b>	The term Host is used interchangeably with the term Server.
<b>Server</b>	The computer where the data and the RPC Broker remote procedure calls (RPCs) reside.



**REF:** Please refer to the "Glossary" section in the other RPC Broker manuals for additional terms and definitions.

## How to Obtain Technical Information Online

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



**NOTE:** Methods of obtaining specific technical information online will be indicated where applicable under the appropriate topic.

**REF:** Please refer to the *RPC Broker Technical Manual* for further information.

### Help at Prompts

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

### Obtaining Data Dictionary Listings

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



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

## Assumptions About the Reader

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

- VistA computing environment:
  - Kernel—VistA M Server software
  - Remote Procedure Call (RPC) Broker—VistA Client/Server software
  - VA FileMan data structures and terminology—VistA M Server software
- Microsoft Windows environment
- M programming language
- Object Pascal programming language.

## Orientation

- Object Pascal programming language/Borland Delphi Integrated Development Environment (IDE)—RPC Broker

It provides installation instructions and an overall explanation of configuring RPC Broker and the functionality contained in RPC Broker Version 1.1. However, no attempt is made to explain how the overall VistA programming system is integrated and maintained. Such methods and procedures are documented elsewhere. We suggest you look at the various VA home pages on the World Wide Web for a general orientation to VistA. For example, go to the VistA Development Home Page at the following Website:

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

## Reference Materials

Readers who wish to learn more about the RPC Broker should consult the following:

- *RPC Broker Release Notes*
- *RPC Broker Installation Guide* (this manual)
- *RPC Broker Systems Management Guide*
- *RPC Broker Technical Manual*
- *RPC Broker Getting Started with the Broker Development Kit (BDK)*
- *RPC Broker Developer's Guide* (i.e., BROKER.HLP, online help designed for programmers, distributed with the BDK)
- RPC Broker Home Page at the following Website:

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

This site provides announcements, additional information (e.g., Frequently Asked Questions [FAQs], advisories), documentation links, archives of older documentation and software downloads.

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

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

VistA documentation can be downloaded from the VHA Software Documentation Library (VDL) Website:

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

VistA documentation and software can also be downloaded from the Enterprise VistA Support (EVS) anonymous directories:

- Preferred Method      [download.vista.med.va.gov](ftp://download.vista.med.va.gov)

This method transmits the files from the first available FTP server.

- Albany OIFO      [ftp.fo-albany.med.va.gov](ftp://fo-albany.med.va.gov)
- Hines OIFO      [ftp.fo-hines.med.va.gov](ftp://fo-hines.med.va.gov)
- Salt Lake City OIFO      [ftp.fo-slc.med.va.gov](ftp://fo-slc.med.va.gov)



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# 1. Preliminary Considerations

## Purpose

The purpose of this guide is to provide instructions for installing the Veterans Health Information Systems and Technology Architecture (VistA) Remote Procedure Call (RPC) Broker (also referred to as "Broker") Version 1.1 software.

This version of the RPC Broker provides programmers with the capability to develop and deploy new VistA client/server software using the Broker Delphi components in the 32-bit environment.

## Installation Procedures—Outline

The installation of the RPC Broker can be a *multi-part* process. Separate installation procedures are provided in this guide for each of the following target environments:

- I. VistA M Server Installation Instructions
- II. *Standard Client Workstations Installation Instructions:*
  - A. Interactive Installations
  - B. *Non-Interactive Installations*
- III. *Programmer-only Client Workstations Installation Instructions*

For all patches, please read the patch installation instructions in the Patch module on FORUM first. For patches and new releases (including virgin installations), please read the Readme.txt file. Based on the release/patch type indicated, do the following:

- ***Standard Client Workstation and/or Server Patch:***
  - ***Standard Client Only***—If this is a *standard* client workstation only patch installation, follow the client installation instructions in the "*Standard Client Workstation Installation Instructions*" section in this manual only.
  - ***Standard Client and Server***—If this is a *standard* client workstation *and* a server patch installation, follow the client installation instructions in the "*Standard Client Workstation Installation Instructions*" section in this manual and the server installation instructions in the Patch module on FORUM.
- ***Programmer-only Client Workstation and/or Server Patch:***
  - ***Programmer-only Client Only***—If this is an RPC Broker Development Kit (BDK) only patch installation, follow the client installation instructions in the "*Programmer-only Workstation Delphi 2007, 2006, 2005, 7.0, 6.0, and 5.0 Instructions*" section in this manual only.
  - ***Programmer-only Client and Server***—If this is an RPC Broker Development Kit (BDK) *and* a server patch installation, follow the client installation instructions in the "*Programmer-only Workstation Delphi 2007, 2006, 2005, 7.0, 6.0, and 5.0 Instructions*"

section in this manual and the server installation instructions in the Patch module on FORUM.


- **Server-side Only Patch**—Follow the server installation instructions in the Patch module on FORUM.
- **Full Release/Virgin Installation (*standard client workstation, programmer-only client workstation, and Vista M Server*)**—Follow all installation instructions in this manual.

For *standard* client workstations, two methods are provided for installing the RPC Broker client software:

- **Interactive**—user input required
- **Non-interactive**—"silent," no user input required

For *programmer-only* client workstations, there are separate installation procedures, depending on the version of Delphi for which support is needed:

- Delphi 2007
- Delphi 2006
- Delphi 2005
- Delphi V. 7.0
- Delphi V. 6.0
- Delphi V. 5.0

 **NOTE:** Delphi Versions 2.0, 3.0, and 4.0 are no longer supported. Delphi V. 2.0 was supported prior to patch XWB\*1.1\*4, Delphi V. 3.0 was supported prior to XWB\*1.1\*13, and Delphi V. 4.0 was supported prior to and including XWB\*1.1\*29.

**REF:** For installation guides and other documentation supporting Delphi V.2.0, 3.0, and 4.0, please refer to the RPC Broker Archives at the following Website:

<http://vista.med.va.gov/broker/archive.asp>

For *first-time field deployments*, we strongly recommend the following approach to installing the RPC Broker:

1. Obtain the RPC Broker documentation. It is available in Acrobat PDF format, and can be downloaded from the National Product Support (NPS) anonymous directories or from the VHA Software Documentation Library (VDL) Website:

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

2. Install the server software in a Test account prior to installing it in a Production account.



**REF:** Some RPC Broker distribution files have been replaced with patched versions, making them obsolete, including the original, unpatched Programmer client workstation software. All such obsolete files remain available from the RPC Broker Website's archive at the following Website:

<http://vista.med.va.gov/broker/archive.asp>


## Distribution Files

### RPC Broker Patch XWB\*1.1\*47

Confirm the following RPC Broker Patches XWB\*1.1\*47 software and documentation files:

**Table 1-1: Distribution files—RPC Broker Patch XWB\*1.1\*47 client/server files**




File Name	Type	Description
XWB1_1P47README.TXT	ASCII	<b>Readme File</b> (manual). This file provides any pre-installation instructions, last minute changes, new instructions, and additional information to supplement the manuals.  Read all sections of this file prior to following the installation instructions in the <i>RPC Broker Installation Guide</i> (i.e., XWB1_1P47INSTALL_GUIDE.PDF).
XWB1_1P47INSTALL_GUIDE.PDF	Binary	<b>Installation Guide</b> (manual). Use this manual in conjunction with the Readme text file (i.e., XWB1_1P47README.TXT).
XWB1_1P47GETTING_STARTED.PDF	Binary	<b>Getting Started with the Broker Development Kit</b> (manual).
XWB1_1P47SYSTEMS_MANAGEMENT_GUIDE.PDF	Binary	<b>Systems Management Guide</b> (manual).
XWB1_1P47TECHNICAL_MANUAL.PDF	Binary	<b>Technical Manual</b> (manual).
XWB1_1P47RELEASE_NOTES.PDF	Binary	<b>Release Notes</b> (manual).
XWB1_1P47_BDK32_080626.zip	Binary	<b>Programmer-only Client Workstation Software</b> (client software). This is a Zip file that contains the following: <ul style="list-style-type: none"> <li>• Source code.</li> <li>• Samples.</li> <li>• Broker Development Kit (BDK): Provides the RPC Broker Delphi Components for development of RPC Broker-enabled applications.</li> <li>• BROKER.HLP: The complete online reference to the BDK.</li> <li>• BrokerProgPref.exe: Sets BDK developer preferences.</li> <li>• ServerList.exe: A configuration tool to edit client connections to RPC Broker servers.</li> </ul>

File Name	Type	Description
		 <b>REF:</b> For more information, please refer to the "Edit Broker Servers Program" section in the "System Features" chapter of the <i>RPC Broker Systems Management Guide</i> .

## RPC Broker V. 1.1 Base Software

Confirm the following RPC Broker V. 1.1 software base files:

**Table 1-2: Distribution files—RPC Broker V. 1.1 base client/server software files**

File Name	Type	Description
xwb1_1ws.exe	Binary	<p><b>Standard Client Workstation Software</b> (client software). This is a self-installing executable that contains the following:</p> <ul style="list-style-type: none"> <li>Client Agent Software: Software to install on client workstations to run RPC Broker applications.</li> </ul> <p> <b>REF:</b> For more information, please refer to the "System Features" chapter of the <i>RPC Broker Systems Management Guide</i>.</p> <ul style="list-style-type: none"> <li>RPCTEST.EXE: A diagnostic tool to test connectivity to RPC Broker servers.</li> </ul> <p> <b>REF:</b> For more information, please refer to the "Troubleshooting" chapter of the <i>RPC Broker Systems Management Guide</i>.</p> <ul style="list-style-type: none"> <li>BAPI32.DLL: A 32-bit Broker Dynamic Link Library (DLL) interface to Broker component functions.</li> </ul> <p> <b>REF:</b> For more information, please refer to the "BROKER.HLP" file.</p>
xwb_dflt.ini	ASCII	<b>Initialization File</b> (client software). Use this file for <i>non-interactive</i> installation of the Broker on <i>standard</i> client workstations.
xwb1_1.kid	ASCII	<b>KIDS Distribution</b> (M Server base software). This file contains the original (unpatched) RPC Broker server software: <ul style="list-style-type: none"> <li>1 Global (^XWB) and VA FileMan files.</li> <li>Server Routines.</li> <li>Kernel Options and Remote Procedure Calls.</li> </ul>
Server patches (KIDS)	ASCII	<b>Server Patches</b> (M Server software). Obtain all released RPC Broker V. 1.1 server-side patches, from the Patch Module on FORUM or through normal procedures.



**REF:** These RPC Broker base software files are distributed separately from the RPC Broker Patch XWB\*1.1\*47 software and documentation distribution and can be obtained at the following Website:

<http://vista.med.va.gov/broker/archive.asp>

## VistA M Server Requirements

The following minimum software tools are required on your VistA M Server in order to install and use the RPC Broker:

### ■ Server Operating System

InterSystems Caché for NT and OpenVMS

### ■ Fully Patched M Accounts

You should have both a development Test account and a Production account for the Broker software.

The account(s) must contain the *fully* patched versions of the following VistA software:

- Kernel V. 8.0



**CAUTION:** For virgin installations of the RPC Broker at Kernel V. 8.0 sites, install Patch #59 (i.e., XU\*8\*59), if you haven't already installed it, *after* you have installed the RPC Broker V. 1.1.

- Kernel Toolkit V. 7.3
- VA FileMan V. 22.0

These VistA software applications must be properly installed and *fully* patched prior to installing the RPC Broker server software distribution. Patches must be installed in published sequence.

### ■ Network communications Software

Your server needs to have TCP/IP running.

### ■ Released RPC Broker V. 1.1 Patches

At the time of publication of this manual, several server-side patches for the RPC Broker V. 1.1 have been released. You should have these patches readily available so that you can apply them after you install the baseline RPC Broker V. 1.1 KIDS distribution. Obtain all released RPC Broker V. 1.1 server-side patches, from the Patch Module on FORUM or through normal procedures.

## ***Standard Client Workstation Requirements***

The following minimum hardware and software tools are required on your *standard* client workstation in order to install and use the RPC Broker:

### ■ **Hardware**

80x86-based client workstation

### ■ **Operating System**

One of the following 32-bit operating systems:

- Microsoft Windows XP
- Microsoft Windows 2000



**NOTE:** The VA has made the decision to go to a 32-bit Microsoft Windows environment. Therefore, this version of the Broker does not operate on Microsoft Windows 3.1 or Windows 3.1 with WIN32S.

### ■ **Network communications Software**

The Broker requires networked client workstations running Microsoft's native TCP/IP stack.



**NOTE:** Currently only Winsock compliant TCP/IP protocol is supported on the LAN or remotely as Point-to-Point Protocol (PPP) or Serial Line Internet Protocol (SLIP). You must use RAS (Remote Access Service) or Dialup Networking to connect to the server using PPP or SLIP. For the setup of RAS or Dialup Networking, please refer to the appropriate operating system's documentation.

## ***Programmer-only Client Workstation Requirements***

The workstation requirements for *programmer-only* workstations are the same as for *standard* client workstations (see previous section).

■ **Delphi V. 7.0, 6.0, or 5.0 Software** (required for the Broker Development Kit [BDK])

Delphi is *not* required for developers who use the RPC Broker Dynamic Link Library (DLL), rather than the TRPCBroker Delphi component. For such developers, any development product that supports linking to 32-bit Microsoft Windows DLLs can be used.

Versions 1.1 and greater of the RPC Broker do *not* support development of Delphi V. 1.0 16-bit (i.e., Microsoft Windows 3.1 and below) applications. However, the Broker routines on the VistA M Server will continue to support VistA applications previously developed in the 16-bit environment.



**CAUTION:** This statement defines the extent of support relative to use of Delphi. The Office of Information (OI) will support the Broker Development Kit (BDK) running in the currently offered version of Delphi and the immediately previous version of Delphi. This level of support became effective 06/12/2000.

Sites may continue to use outdated versions of the RPC Broker Development Kit but do so with the understanding that support will not be available and that continued use of outdated versions will not afford features that may be essential to effective client/server operations in the VistA environment. An archive of old (no longer supported) Broker Development Kits will be maintained at:

<http://vista.med.va.gov/broker/archive.asp>



## Skills Needed for Installation

Skills required to perform the installation are listed below. Instructions for performing these functions are provided in vendor-supplied operating system manuals as well as VistA publications.

### You need to know how to do the following:

- Back up the system  
*[VistA M Server and Programmer/Standard client workstations]*
- Create directories on the host file system  
*[Programmer/Standard client workstation only]*
- Copy files using commands of the host file system  
*[VistA M Server and Programmer/Standard client workstations]*
- Run a KIDS installation  
*[VistA M Server only]*
- Switch User Class Identification (UCI) accounts  
*[VistA M Server only]*
- Enable/Disable routine mapping and journaling  
*[VistA M Server only]*
- Manage globals, including global placement, protection, and translation  
*[VistA M Server only]*
- Run a system status and restore a job  
*[VistA M Server only]*

## Preliminary Considerations

## 2. VistA M Server Installation Instructions



**CAUTION:** First, determine if you need to follow the installation instructions in this section by consulting the patch installation instructions, the Readme.txt file, and the "Preliminary Considerations" section in this manual.

Do *not* use the instructions in this section, if you are installing a server-side RPC Broker patch. Instead, follow the installation instructions included with the patch.

Only use the instructions in this section if you are performing a **VIRGIN** server installation, or **UPGRADING VERSIONS** of the RPC Broker on the server.

The instructions in this section are applicable for the Test/Production accounts in the Caché environment.

### 1. Confirm Distribution Files (*recommended*)

Use the following files to install the VistA M Server routines:

**Table 2-1: Distribution files—RPC Broker VistA M Server files**

File Name	Type	Description
XWB1_1P47README.TXT	ASCII	<b>Readme File</b> (manual). This file provides any pre-installation instructions, last minute changes, new instructions, and additional information to supplement the manuals.  Read all sections of this file prior to following the installation instructions in the <i>RPC Broker Installation Guide</i> (i.e., XWB1_1P47INSTALL_GUIDE.PDF).
XWB1_1P47INSTALL_GUIDE.PDF	Binary	<b>Installation Guide</b> (manual). Use this manual in conjunction with the Readme text file (i.e., XWB1_1P47README.TXT).
xwb1_1.kid	ASCII	<b>KIDS Distribution</b> (M Server base software). This file contains the original (unpatched) RPC Broker server software: <ul style="list-style-type: none"><li>• 1 Global (^XWB) and VA FileMan files.</li><li>• Server Routines.</li><li>• Kernel Options and Remote Procedure Calls.</li></ul>

### 2. Retrieve Released RPC Broker V. 1.1 Patches (*required*)

At the time of publication of this manual, several server-side patches for the RPC Broker V. 1.1 have been released. You should have these patches readily available so that you can apply them later in the installation process.

Obtain all released RPC Broker V. 1.1 server-side patches from the Patch Module on FORUM or through normal procedures.

### 3. Save Broker Routines and Global as a Safeguard before the Installation (*optional*)



**VIRGIN INSTALLATION:** If this is a virgin installation proceed directly to Step 4.

If you are running a prior version of the RPC Broker, you should save the existing Broker routines and global (i.e., XWB namespace) on the VistA M Server prior to performing the main RPC Broker installation. It is best to save the Broker routines and global immediately prior to performing the RPC Broker main installation.

### 4. Place the ^XWB Global (*required*)

The RPC Broker uses one global, ^XWB. This global is used by the RPC Broker to store the REMOTE PROCEDURE (#8994) and the RPC BROKER SITE PARAMETERS (#8994.1) files.

If the ^XWB global is not already placed in the target M account, go ahead and place it before proceeding with the installation.

The ^XWB global has the potential to be read-intensive as more and more remote procedures are added to it in the future. The ^XWB global is static for the most part (except during the addition of new applications), so journaling can be disabled if so desired.

### 5. Review Global Protection, Translation, and Journaling (*required*)

Check the global protection, translation, and journaling characteristics of the RPC Broker ^XWB global on your system. An outline of a possible scheme for the management of the Broker global is listed below:

**Table 2-2: Global protection, translation, and journaling information for the ^XWB global**

Global Name	Protection: Caché	Translate?	Journal?
^XWB	Owner: RWD Group: N World: N Network: RWD	YES	NO



**REF:** Cookbook recommendations should also be consulted regarding journaling, translation, and replication.

## 6. Do Not Run any Client/Server Software during the Installation *(required)*

No Broker-based client/server software should be running while the Broker installation on the server is taking place.



**VIRGIN INSTALLATION:** If this is a virgin installation, proceed directly to Step 8.

## 7. Shut Down the Broker Listener on the Server *(required)*

Check the system status and verify if the XWBTCPL routine is running (i.e., Broker Listener). If any Listeners are running, shut them down as follows:

- A. Log into your VistA M Server
- B. Enter the following at the M prompt:

```
>D STOP^XWBTCPL(Listener port)
```

(Typically, the Listener port is 9200.)



**NOTE:** Alternatively, after you have installed the RPC BROKER SITE PARAMETERS file (#8994.1), you can use VA FileMan to set the STATUS field in this file for the appropriate port to STOP. Assuming that TaskMan is running, the Listener will be stopped on that port.

## 8. Copy XWB1\_1.KID (base software) to the VistA M Server Test and Production Accounts *(required)*

XWB1\_1.KID is the VistA M Server RPC Broker base software in Kernel V. 8.0 KIDS format.

## 9. Verify You Have an HFS Device and a Null Device *(required)*

- A. Verify you have a Host File Server (HFS) device in the DEVICE file (#3.5) named "HFS". If you have performed KIDS installations on your server before, you probably already have an appropriate HFS device set up. If you don't have an entry for this device, you must create one.



**REF:** For information on how to create an HFS device, please refer to "Host Files" chapter in the *Kernel Systems Management Guide* located at the following Website:

<http://www.va.gov/vdl/application.asp?appid=10>

- B. Verify you have a Null device in the DEVICE file (#3.5) named "NULL" (or whose mnemonic is named "NULL"). You can have other devices with similar names, but one device is needed whose name or mnemonic is "NULL". The subtype should be a "P-" subtype (e.g., P-OTHER), the margin should be a minimum of 80, and the page length should be a minimum of 60. Sample setups:

#### Caché Null Device Setup Example

```
NAME: NULL                                $I: ../nul
ASK DEVICE: NO                            ASK PARAMETERS: NO
SIGN-ON/SYSTEM DEVICE: NO                LOCATION OF TERMINAL: BIT BUCKIT
SUBTYPE: P-OTHER                          TYPE: TERMINAL
```

#### P-OTHER Terminal Type Setup Example

```
NAME: P-OTHER                            RIGHT MARGIN: 132
FORM FEED: #                             PAGE LENGTH: 64
BACK SPACE: $C(8)                        DESCRIPTION: General prntr (132)
```

## 10. Using KIDS, Install Broker Routines and Remote Procedures (required)

In the PACKAGE file (#9.4), verify the NAME field (#.01) for any package with the XWB namespace. The NAME should be RPC BROKER. If the NAME is incorrect, you must change it to read RPC BROKER. If no entry exists, the KIDS install will create the entry for you.

Using KIDS, load and install the Broker routines and remote procedures. Make sure you have installed *all* of the Kernel, VA FileMan, and Kernel Toolkit patches.



**REF:** For Kernel V. 8, install Kernel patch XU\*8\*59, if you have not already installed it, *after* version 1.1 of the Broker. You do *not* need a previous version of the Broker to install this latest version. Follow the instructions under the "Installation Instructions" section in Patch XWB\*1.1\*47 in the Patch module on FORUM.



**REF:** For more information on KIDS, please refer to the "KIDS" section in the *Kernel Systems Management Guide* located at the following Website:

<http://www.va.gov/vdl/application.asp?appid=10>

## 11. Setup for XWB LISTENER STARTER Option (*recommended*)

The XWB LISTENER STARTER Option needs some setup performed so that it knows how to specify on what node(s) to launch listeners

Do the following:

- A. Use VA FileMan to edit the BOX-VOLUME PAIR field (#.01) in the TASKMAN SITE PARAMETERS file (#14.7). For each Box-Volume pair where you plan to run a Broker Listener, make sure that the Box-Volume pair is entered in the BOX-VOLUME PAIR field.



**REF:** For more information on configuring TaskMan, please refer to the "Task Manager System Management: Configuration" chapter in the *Kernel Systems Management Guide* located at the following Website:

<http://www.va.gov/vdl/application.asp?appid=10>

- B. Type the following at the programmer prompt:

```
>S XWBCHK="ALLOW"
```

- C. Invoke VA FileMan using D Q^DI and edit the RPC BROKER SITE PARAMETERS file (#8994.1):
  - i. Select your site domain in the DOMAIN NAME field (#.01); only one entry is allowed here.
  - ii. For nodes where you plan to run Broker Listeners, enter/make sure their Box-Volume pairs are entered in the BOX-VOLUME PAIRS subfield (#.01) of the LISTENER multiple (#7):
    - For each Box-Volume pair enter all the ports in the PORT subfield (#.01) of the PORT multiple that you plan to use for the Listeners.
    - Also, enter the UCI in the UCI field (#1) of the PORT multiple where the Listener should run.

## 12. Device Setup for Caché Sites (*required*)

For Caché sites only, invoke VA FileMan using D Q^DI and review/modify the TYPE field values in the DEVICE file (#3.5) for the TCP and NULL device entries:

**Table 2-3: TYPE field values in the DEVICE file (#3.5) for the TCP and NULL device entries**

Device	TYPE Field Value
TCP	VIRTUAL TERMINAL
NULL	HOST FILE SERVER (HFS) or TERMINAL

### 13. Review Parameters for Auto Signon (*required*)

All sites should invoke VA FileMan using D Q^DI and review/modify:

- The system DEFAULT AUTO SIGN-ON field (#218) value in the KERNEL SYSTEM PARAMETERS file (#8989.3).
- Any AUTO SIGN-ON values set in users' NEW PERSON file (#200) entries.

The default value for both fields is null. These fields, in conjunction with Kernel's Multiple Signon fields, control access to Auto Signon for users in both the GUI and roll-and-scroll environments. The fields in the NEW PERSON file (#200) are checked first. If the user fields in the NEW PERSON file (#200) are null, the values in the KERNEL SYSTEM PARAMETERS file (#8989.3) are used.



**NOTE:** The values in the AUTO SIGN-ON and MULTIPLE SIGN-ON fields in the NEW PERSON file (#200) take precedence over the values in the AUTO SIGN-ON and DEFAULT MULTIPLE SIGN-ON fields in the KERNEL SYSTEM PARAMETERS file (#8989.3).

**REF:** For more specific information on setting the Auto Signon site parameters, please refer to the "Integrated Auto Signon for Multiple User Sessions" topic in Chapter 1 of the *RPC Broker Systems Management Guide*.

### 14. Apply Released Server RPC Broker V. 1.1 Patches (*required*)

At the time of publication of this manual, several server-side patches for the RPC Broker V. 1.1 have been released. Now that you have completed installing the released RPC Broker V. 1.1 original distribution, you should also apply all RPC Broker V. 1.1 server-side patches (e.g., XWB\*1.1\*47).

Patches must be installed in their published sequence. To install the patches, follow the installation instructions contained with each patch.



**REF:** For a complete list of *all* patches released with the RPC Broker V. 1.1 software, please refer to Patch Module on FORUM.



## 15. Start the Broker Listener on the Server (*recommended*)

Version 1.1 of the RPC Broker uses an M Listener that should always be running in the background, listening to a known port. To start a single Listener on a given port (e.g., 9200), do the following:

- A. Log into your VistA M Server
- B. Enter the following at the M prompt:
 

```
>D STRT^XWBTCP(Listener port)
```



**NOTE:** As a convention, the RPC Broker uses 9200, however, sites can choose any available port greater than 1024 (i.e., sockets 1 to 1024 are reserved for standard, well-known services such as SMTP, FTP, Telnet, etc.).

Alternatively, with Caché, you can invoke VA FileMan (D Q^DI) and edit the new RPC BROKER SITE PARAMETERS file (#8994.1). Set the STATUS field to START and, assuming that TaskMan is running, the Listener will be started. The STATUS field will change to RUNNING.

## 16. Automatically Start the Broker Listener(s) (*optional*)

The XWB LISTENER STARTER option can be used to start all configured Broker Listeners at one time (i.e., listeners configured to start in the RPC Broker's site parameters). Additionally, this option can be used to automatically start all of the Listener processes you need when TaskMan starts up, such as after the system is rebooted or configuration is restarted.



**REF:** For information on automatically starting the Broker Listener(s) via the XWB LISTENER STARTER option, please refer to the "Broker Listeners and Ports" topic in Chapter 1 of the *RPC Broker Systems Management Guide*.

## 17. Verify the Client/Server Installation of the Broker (*recommended*)

After the server installation is complete and the Listener has been started, verify that everything was installed correctly.

Locate and run the new Broker diagnostic tool (i.e., RPCTEST.EXE) on the client workstation to test the client connection to the server. The installation is successful, if you can signon to the server.



**REF:** Follow the procedures on how to run a program as described in your operating system's Systems Manual. For more information on RPCTEST.EXE, please refer to the "Test the Broker Using the RPC Broker Diagnostic Program" in Chapter 3 of the *RPC Broker Systems Management Guide*.



**CAUTION:** You have now completed the installation of the RPC Broker software on the *VistA M Server*.

### 3. *Standard* Client Workstation Installation Instructions



**CAUTION:** First, determine if you need to follow the installation instructions in this section by consulting the patch installation instructions, the Readme.txt file, and the "Preliminary Considerations" section in this manual.

Two sets of instructions are provided for *standard* client workstations:

- Interactive
- Non-Interactive




**CAUTION:** The RPCBI.DLL and Client Manager (i.e., CLMAN.EXE) previously distributed and installed in the VISTA/Broker directory on the client workstation (i.e., via Broker V. 1.0) are not used by this version of the Broker. However, they should not be removed from client workstations. Any 16-bit RPC Broker V. 1.0-based applications in use on the workstation (e.g., early versions of PCMM) would still need the RPCBI.DLL and Client Manager.



## Interactive Installation Instructions

### 1. Confirm Distribution Files (*recommended*)

You need the following files to install the RPC Broker *standard* client workstation software:

**Table 3-1: Distribution files—RPC Broker *standard* client workstation files (interactive installation)**

File Name	Type	Description
XWB1_1P47README.TXT	ASCII	<b>Readme File</b> (manual). This file provides any pre-installation instructions, last minute changes, new instructions, and additional information to supplement the manuals.  Read all sections of this file prior to following the installation instructions in the <i>RPC Broker Installation Guide</i> (i.e., XWB1_1P47INSTALL_GUIDE.PDF).
XWB1_1P47INSTALL_GUIDE.PDF	Binary	<b>Installation Guide</b> (manual). Use this manual in conjunction with the Readme text file (i.e., XWB1_1P47README.TXT).
xwb1_1ws.exe	Binary	<b>Standard Client Workstation</b> (client software). This is a self-installing executable that contains the following: <ul style="list-style-type: none"><li>• Client Agent Software: Software to install on client workstations to run RPC Broker applications.</li></ul>  <b>REF:</b> For more information, please refer to the "System Features" chapter of the <i>RPC Broker</i>

File Name	Type	Description
		<p><i>Systems Management Guide.</i></p> <ul style="list-style-type: none"> <li>• RPCTEST.EXE: A diagnostic tool to test connectivity to RPC Broker servers.</li> </ul> <p> <b>REF:</b> For more information, please refer to the "Troubleshooting" chapter of the <i>RPC Broker Systems Management Guide</i>.</p> <ul style="list-style-type: none"> <li>• BAPI32.DLL: A 32-bit Broker Dynamic Link Library (DLL) interface to Broker component functions.</li> </ul> <p> <b>REF:</b> For more information, please refer to the "BROKER.HLP" file.</p>

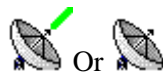
## 2. Shut Down Microsoft Windows Applications (*required*)

We recommend shutting down all other Microsoft Windows-based applications running on the workstation you're installing on. In particular, you must *not* be running *any* application that uses the Broker during the installation.


## 3. Shut Down the Client Agent (*required*)

If the RPC Broker Client Agent is running, shut it down. To determine if the Client Agent is running, look in the workstation's menu bar tray. If you see one of the following the RPC Broker Client Agent icons, the Client Agent is running:

**Figure 3-1: RPC Broker Client Agent icons (connected, not connected)**



If it is running, to shut down the Broker Client Agent, do one of the following:

- Right-click on the RPC Broker Client Agent icon in the workstation's menu bar tray, and choose ShutDown from the pop-up Client Agent menu.
- Double-click on the RPC Broker Client Agent icon to open the Client Agent window, and then click  in that window.

At the prompt "If you close the client agent, your ability to access the VistA server may be reduced. Do you want to proceed with closing the client agent?" click Yes.

#### 4. Run the Installation Program (*required*)

Run XWB1\_1WS.EXE on the client workstation, starting the interactive *standard* client workstation installation. For example, on a Microsoft Windows XP system:

- A. Go to the Start menu.
- B. Select the Run option.
- C. Click Browse to locate XWB1\_1WS.EXE.
- D. Click OK to run XWB1\_1WS.EXE

Follow the online instructions provided when you run the installation program. We *strongly* recommend the following:

- **Accept default directories**—When prompted to accept the default Broker Directories, click OK.



**CAUTION: This version (1.1) of the RPC Broker is a 32-bit application. We strongly recommend that you load it in a separate directory from any previously installed 16-bit (version 1.0) RPC Broker.**

- **Always start the Client Agent**—When prompted whether to always start the Broker Client Agent, click Yes. This starts the Broker Client Agent whenever Microsoft Windows starts.



**REF:** For a complete listing of installed client files after installation, refer to the "File List" chapter in the *RPC Broker Technical Manual*.

#### 5. Restart Microsoft Windows (*recommended*)

Restart Microsoft Windows so the latest version of the Broker Client Agent is running.

#### 6. Modify the HOSTS File (*optional*)

The HOSTS file is an ASCII text file that contains a list of the servers and their IP addresses. If IRM wishes to add, modify, or delete servers and IP addresses to be used by the Broker, please refer to the "HOSTS File" topic in Chapter 1 of the *RPC Broker Systems Management Guide*.

#### 7. Add Listeners/Ports to the Microsoft Windows Registry (*optional*)

If IRM wishes to add, modify, or delete servers and ports to be used by the Broker, please refer to the "Edit Broker Servers Program" topic in Chapter 1 of the *RPC Broker Systems Management Guide*.

## Non-Interactive Installation Instructions






**CAUTION:** The *standard* client workstation installation does more than copy files into directories; it also makes entries in the Microsoft Windows Registry. Thus, simply doing a mass copy of files from a server to various *standard* client workstations is insufficient.

### 1. Confirm Distribution Files (*recommended*)

The following files are needed to install the RPC Broker *standard* client workstation software *non-interactively*:

**Table 3-2: Distribution files—RPC Broker *standard* client workstation files (*non-interactive* installation)**

File Name	Type	Description
XWB1_1P47README.TXT	ASCII	<p><b>Readme File</b> (manual). This file provides any pre-installation instructions, last minute changes, new instructions, and additional information to supplement the manuals.</p> <p>Read all sections of this file prior to following the installation instructions in the <i>RPC Broker Installation Guide</i> (i.e., XWB1_1P47INSTALL_GUIDE.PDF).</p>
XWB1_1P47INSTALL_GUIDE.PDF	Binary	<p><b>Installation Guide</b> (manual). Use this manual in conjunction with the Readme text file (i.e., XWB1_1P47README.TXT).</p>
xwb1_1ws.exe	Binary	<p><b>Standard Client Workstation</b> (client software). This is a self-installing executable that contains the following:</p> <ul style="list-style-type: none"> <li>Client Agent Software: Software to install on client workstations to run RPC Broker applications.</li> </ul> <p> <b>REF:</b> For more information, please refer to the "System Features" chapter of the <i>RPC Broker Systems Management Guide</i>.</p> <ul style="list-style-type: none"> <li>RPCTEST.EXE: A diagnostic tool to test connectivity to RPC Broker servers.</li> </ul> <p> <b>REF:</b> For more information, please refer to the "Troubleshooting" chapter of the <i>RPC Broker Systems Management Guide</i>.</p> <ul style="list-style-type: none"> <li>BAPI32.DLL: A 32-bit Broker Dynamic Link Library (DLL) interface to Broker component functions.</li> </ul> <p> <b>REF:</b> For more information, please refer to the</p>

File Name	Type	Description
		"BROKER.HLP" file.
xwb_dflt.ini	ASCII	<b>Initialization File</b> (client software). Use for <i>non</i> -interactive installation of the Broker on <i>standard</i> client workstations.

## 2. Modify the XWB\_DFLT.INI file for Site-specific Settings (*optional*)

The *non*-interactive installation uses the installation settings stored in the file XWB\_DFLT.INI. This file must be in the same directory from which you run XWB1\_1WS.EXE. Prior to the installation, you may use a text editor (e.g., Microsoft Notepad) to edit this file and change the default settings, to control how the installation is performed. Its entries and permissible settings are as follows:

Table 3-3: XWB\_DFLT.INI file default settings

XWB_DFLT.INI Entry	Default Value	Description and Permissible Settings
Version	1.1	<i>Do not change the Version entry.</i>
BrokerDirectory	c:\Program Files\VISTA\Broker	Broker client files directory location.
MakeBackUps	Yes	Yes or No entry. If yes, automatically backs up Broker client files into the directory specified by the BackUpDirectory entry.
BackUpDirectory	c:\Program Files\VISTA\Broker\Backup	Backup Broker client files directory location.
AutoStartClientAgent	Yes	Yes or No entry. Yes enables Automatic startup of the Client Agent on the workstation.



**CAUTION:** The Version entry in the XWB\_DFLT.INI file should be 1.1. Do *not* edit this entry.

## 3. Load and Run XWB1\_1WS.EXE with Switches (*required*)

Prior to beginning an installation, we recommend you shut down all other Microsoft Windows-based applications running on the workstation. Specifically, you must *not* be running the Broker Client Agent or *any* application that uses the Broker during the installation.

To start the *non*-interactive *standard* client workstation installation setup program, run XWB1\_1WS.EXE with switches: **/S AUTO:**

```
XWB1_1WS.EXE /S AUTO
```

The switches must be in UPPERCASE. Follow the procedures on how to run a program non-interactively as described in your operating system's Systems Manual.

#### 4. Finish Remaining Installation Tasks (*recommended*)

To complete the *non*-interactive installation, please refer to and follow Steps 5 – 7 of the "Interactive Installation Instructions" from earlier in this chapter. Special workstation management software and/or local procedures may enable you to perform these remaining steps non-interactively.



**CAUTION:** You have now completed the installation of the RPC Broker software on the *standard* client workstation.



## 4. Programmer-only Workstation Delphi 2007, 2006, 2005, 7.0, 6.0, and 5.0 Instructions



**CAUTION:** First, determine if you need to follow the installation instructions in this section by consulting the patch installation instructions, the Readme.txt file, and the "Preliminary Considerations" section in this manual.

### 1. Considerations Before Installing the BDK

- **Installation Sequence**—The Programmer Client Workstation installation no longer requires that the *standard* client workstation software be installed prior to installing the Programmer Client Workstation.
- **Microsoft Windows Registry Access**—While the RPC Broker installation on the client workstation does *not* require Administrator privileges, it does require the ability to write to the HKEY\_LOCAL\_MACHINE entries under the Software key in the Microsoft Windows Registry. Under Microsoft Windows 2000, the User category cannot. However, under Windows 2000, the Power User category can write to the Software key under the HKEY\_LOCAL\_MACHINE part of the registry. Thus, while not having to have Administrator privileges, installers of the RPC Broker software should at least be Power Users on Windows 2000.
- **Source Code**—The release of the source code does not affect how a developer uses the Broker components or other parts of the BDK.



**CAUTION:** Modified BDK source code should *not* be used to create Vista GUI applications.



**NOTE:** Suggestions for changes to the BDK should be done via NOIS/Remedy (for bugs) or E3R (for enhancements) for review and possible inclusion in another patch.

- **Design-time and Run-time Packages**—The BDK has separate run-time and design-time packages. (There is no longer a VistaBroker package.) The packages are XWB\_**D**xx and XWB\_**R**xx, where "**D**" means Design-time, "**R**" means Run-time, and "**xx**" is the two-digit number indicating the version of Delphi with which it should be used (e.g., XWB\_D60 is the design-time package for Delphi V. 6.0). The run-time package should not be used to create executables that depend on a separate XWB\_Rxx.bpl installed on client workstations. There is no procedure in place at this time to reliably install the correct version of the run-time bpl on client workstations.



**CAUTION:** Do *not* compile your project so that it relies on dynamic linking with the BDK's run-time package; that is, do *not* check the "Build with runtime packages" box on the Packages tab of the Project Options dialogue.

- **Package Dependencies**—A Package may have been defined to *require* the Broker package. Patch XWB\*1.1\*14 changed the identity of the Broker design-time package. If you try to install a package into the Delphi IDE that requires the Broker, you may receive an error message like:

```
Can't load package <Package1>.
One of the library files needed to run this package cannot be found.
```

To resolve this problem, Open the DPK file associated with that package; delete the reference to the old version of the Broker in the Requires section; add a reference to the new design-time Broker package (XWB\_Dxx) into the Requires section; recompile and install the package.

- **Component Dependencies**—Some VA-developed components may reference the TRPCBroker component. If you develop applications using such components, be aware that installing a newer version of the TRPCBroker component may cause incompatibilities, until the Broker-dependent components have been recompiled with the new version of the TRPCBroker component. Any such incompatibilities would show up as a compilation error:

```
Unit <Unit1> was compiled with a different version of <Unit2>
```

To resolve this problem, you need to either:

- A. Obtain the source code for the components so that you can recompile the components with the new BDK units.

OR

- B. Obtain a compiled version of their component that was compiled with the same version of the BDK you are using.


The VA FileMan Delphi Components (FMDC) is one example of a package whose source code references the TRPCBroker component. Patch FMDC\*1.0\*1 was released to issue the FMDC source code, so that you can easily recompile FMDC whenever new BDKs are released.

- **Delphi V. 5.0 and V. 6.0 Standard Edition**—Delphi V. 5.0 and Delphi V. 6.0 comes in three flavors: Standard, Professional, and Enterprise. The Standard editions of Delphi V. 5.0 and V. 6.0 are targeted mainly at students, and as such leaves out many features. The Standard Editions do not ship with Delphi's OpenHelp help system. This makes it difficult to integrate the BDK help with Delphi V. 5.0 and V. 6.0, Standard Editions. We do *not* recommend using the Standard Editions of Delphi V. 5.0 and V. 6.0 for RPC Broker development at this time.

## 2. Confirm Distribution Files (*recommended*)

Use the following files to install the BDK for Delphi 2007, 2006, 2005, 7.0, 6.0, or 5.0:

**Table 4-1: Distribution files—RPC Broker *programmer-only* client workstations files**

File Name	Type	Description
XWB1_1P47README.TXT	ASCII	<p><b>Readme File</b> (manual). This file provides any pre-installation instructions, last minute changes, new instructions, and additional information to supplement the manuals.</p> <p>Read all sections of this file prior to following the installation instructions in the <i>RPC Broker Installation Guide</i> (i.e., XWB1_1P47INSTALL_GUIDE.PDF).</p>
XWB1_1P47INSTALL_GUIDE.PDF	Binary	<p><b>Installation Guide</b> (manual). Use this manual in conjunction with the Readme text file (i.e., XWB1_1P47README.TXT).</p>
XWB1_1P47_BDK32_080626.zip	Binary	<p><b>Programmer Client Workstation</b> (client software). This is a Zip file that contains the following:</p> <ul style="list-style-type: none"> <li>• Source code.</li> <li>• Samples.</li> <li>• Broker Development Kit (BDK): Provides the RPC Broker Delphi Components for development of RPC Broker-enabled applications.</li> <li>• BROKER.HLP: The complete online reference to the BDK.</li> <li>• BrokerProgPref.exe: Sets BDK developer preferences.</li> <li>• ServerList.exe: A configuration tool to edit client connections to RPC Broker servers.</li> </ul> <p> <b>REF:</b> For more information, please refer to the "Edit Broker Servers Program" section in the "System Features" chapter of the <i>RPC Broker Systems Management Guide</i>.</p>

## 3. De-Install Any Previous BDK Installed for Delphi V. 2007, 2006, 2005, 7.0, 6.0, or 5.0 (*required*)



**VIRGIN INSTALLATION:** If this is a virgin installation for your version of Delphi proceed directly to Step 4.

- A. Start Delphi 2007, 2006, 2005, 7.0, 6.0, or 5.0 and close any open projects.
- B. From the Delphi menu, select *Component | Install Packages*.

- C. Remove any previous version of the BDk from the Design Packages listing. To do this:
- Scroll through the listing of installed design packages until you find the entry for the previous version of the BDk (e.g., TRPCBroker). The name of the previous version may be Vista RPC Broker, VistaBroker, or it may start with the pattern Vista Broker -- designtime\*. The remainder of this section will refer to this package as YourOldBroker.
  - Select (highlight) this entry.
  - Click Remove.
  - Delphi presents one of two confirmation dialogue boxes, which say one of the following:  
**Confirm 1:**  

```
Remove 'c:\program files\...\YourOldBroker.bpl' from the design package list?
```

If Delphi presents this confirmation dialogue, click Yes.

**Confirm 2:**  

```
Package(s) xxx will be uninstalled because they require package YourOldBroker. Continue remove?
```

If this is correct, press the **OK** button. Any packages dependent on the RPC Broker are also uninstalled. You will need to re-install them after you install or update the TRPCBroker component files. If you click No, you will not be able to de-install the previous RPC Broker software.
- v. If you chose to remove any packages, Delphi may also present a Remove Runtime Packages dialogue, stating:
- ```
The package names in the following list are not used by any installed packages. Remove the selected names from the runtime packages list?
```
- If Delphi presents this dialogue, press the **Yes** or **OK** button.
- Press **OK** in the "Project Options" dialogue box to finish the de-installation.
- D. Close Delphi 2007, 2006, 2005, 7.0, 6.0, or 5.0, answer No if you are prompted to save changes to any projects.

## 4. Install the RPC Broker Software (*required*)



**CAUTION:** Prior to installing the RPC Broker, make sure that you exit/close *all* versions of Delphi running on your system.

- Navigate to the following directory:  
C:\Program Files\Vista directory.
- Rename the existing BDk32 directory (e.g., BDk32\_P40) to maintain the existing files.
- Unzip XWB1\_1P47\_BDk32\_080626.zip file, making sure the "use folders" box is checked, this will create the BDk32 directory and subdirectories under the Vista directory.

- D. After installing the zip file, there should be a BDK32 directory with the following subdirectories:
- Source—Contains the source code and related files for the components.
  - Samples—Contains sample programs compiled with Delphi 5.
    - BrokerEx—Contains BrokerExample and BrokerExampleCCOW (compiled with the CCOWRPCBroker).
    - SilentSignOn—Contains four programs related to silent or quiet signons.
  - Samples D2006—Contains the same sample programs compiled with Delphi 2006.
  - Bin—Contains the bpl and dcp files for the components and D directories for Delphi 2007, 2006, 2005, 7, 6, and 5 contains the compiled units and forms for a specified version of Delphi.

In addition to placing files in the subdirectories of the BDK files directory, copies of the runtime .bpl files (e.g. XWB\_R60.BPL) will be put into the specific Delphi version Bpl directory. For example, depending on the version(s) of Delphi you are running:

```

..\Program Files\Borland\Delphi5\Projects\Bpl\XWB_R50.bpl
..\Program Files\Borland\Delphi6\Projects\Bpl\XWB_R60.bpl
..\Program Files\Borland\Delphi7\Projects\Bpl\XWB_R70.bpl
    
```

The BDK installation supports several different versions of Delphi, which at the current time includes Delphi 2007, 2006, 2005, 7, 6, and 5.

## 5. Verify the Installation of the RPC Broker Components in Delphi (*recommended*)

- A. Start Delphi 2007, 2006, 2005, 7.0, 6.0, or 5.0.
- B. Enter the directories making sure that the directories are entered into the Library fields.
- C. Open the menu Tools | Environment Options.
- D. Select the Library tab [or open the menu Tools | Options and expand the Environment Options and then the Delphi Options.
- E. Select Library-Win32].
- F. Press the ellipsis (...) at the right of the combo box for Library Path.
- G. Either enter the directories in the edit box under the list box or press the ellipsis at the right of the edit box and migrate to the directories. For the default location, these are:

```

C:\Program Files\Vista\BDK32\Dnumber (where number is 5, 6, 7, 2005, 2006, or 2007)
and
C:\Program Files\Vista\BDK32\Source
    
```

The Dnumber directory should come first in the list.

- H. Press Add.
- I. There are two ways to install the components into a version of Delphi:

**Method 1:**

- i. Open Delphi.
- ii. Select the menu Component | Install Packages.
- iii. Press the Add button.
- iv. Migrate to the location of the bpl file for the component (this would be the Design-time file (Dnumber.bpl). The run-time or Rnumber files are not selected, but are used by the Design-time files. These could be selected from the BDK32\Bin directory, or the files could be copied to the location normally used by Delphi [for Delphi 5, 6, or 7, this location is:

For Delphi 7, 6, or 5, this location is:

C:\Program Files\Borland\Delphi5\Projects\Bpl

For Delphi 2005 to 2007, this location is:

C:\Documents and Settings\username\My Documents\Borland Studio  
Projects\Bpl






- v. Select the XWB\_D50.bpl (or 60, 70, 2005, 2006, or 2007 as appropriate) file.
- vi. Press the Open button. This adds it to the list of active components. While most developers would only need that set of components, the SharedRPCBroker\_D50.bpl (or other numbers) file can then be selected if the SharedRPCBroker components are desired as well.

**Method 2:** This method of installing the components is the same as would be used to update a component when something that affects it has changed.

- i. Open Delphi.
- ii. Select the menu File | Close All files.
- iii. Select File | Open.
- iv. Select the XWB\_Rnumber.dpk file from the BDK32\Source directory (where number is the appropriate number for the version of Delphi). The package dialogue will open, for the R or run-time files.
- v. Press Compile.
- vi. Close the dialogue (the Run-time files should always be compiled first, since the Design-time files are dependent upon them).
- vii. Select the menu File | Open.
- viii. Select the corresponding Design-time or D file. The package dialogue will open.
- ix. Press Compile.
- x. Press the Install button to install or update the version of the component.
- xi. Select Close.

The components are now installed.

J. If the Broker components installed correctly, you should see the following components on the Kernel Tab of the Delphi palette:

- —TCCOWRPCBroker
- —TRPCBroker
- —TXWBRichEdit
- —TSharedRPCBroker
- —TSharedBroker

K. Verify that the RPC Broker context-sensitive help has been successfully integrated with Delphi's help.

- i. On a blank form, add a Broker component.
- ii. Select the Broker component on your form and press F1 for help. If the help for the Broker component comes up, you are all set.
- iii. Press the *Help Topics* button while in any RPC Broker or Delphi help topic. You should see the *RPC Broker Developer's Guide* (i.e., BROKER.HLP) manual listed along with the regular Delphi manuals.



**NOTE:** RPC Broker topics should be available in the Delphi help index and full text search tabs as well.



**CAUTION:** You will now need to re-install any packages that were removed when you de-installed the previous BDK (Step #3).



**CONGRATULATIONS:** You have now completed the installation of the RPC Broker software on the *programmer-only* client workstation

**Upon completing the installation of the RPC Broker software on both the VistA M Server *and* client workstation(s), you are now ready to work with the RPC Broker interface and install VistA GUI applications that use the RPC Broker.**