

# Fast**PACS** WebWorkstation Build Instructions

**Company Confidential** 

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# NOTICES

### NOTICE OF CONFIDENTIALITY

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### SCOPE OF THIS DOCUMENT

This document describes the procedure to build FastPACS WebWorkstation specifically on a computer running Windows XP and Internet Information Services version 5.1. This document only applies to WebWorkstation and does not apply for an installation of FastPACS on Windows Server 2003/2008 or other configurations. This document assumes the computer Operating System is already installed and configured.

Failure to execute these procedures in the order presented may produce unpredictable results.

Initial Release:7/2009First Revision:9/2009Second Revision:1/2010

From the latest Distribution, drag the bdinstall5 folder to the desktop of the target computer. Double-click the folder to open it and launch "Setup.exe" to install the Borland Database Engine.

Note: There are two "setup" files in this folder. Launch the one with the computer icon, **not** the one with the icon of the globe.

Accept the default values for the installation and allow the installation to finish:



Move the bdinstall5 folder from the desktop to the recycle bin.

### **ARCHIVE INSTALLATION PART 1 (cont.)**

From the latest Distribution, drag the "dicomserver1414" folder directly to the root of the C: drive of the target computer:

😼 My Computer	
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools	Help 👔
🕞 Back 🔹 🌍 👻 🏂 🔎 S	earch 🌮 Folders
Address 🕃 My Computer	
	Files Stored on This Computer
System Tasks 🔅	ator\Desktop\Distr 2-6-09\dicomserver
<ul> <li>View system information</li> <li>Add or remove programs</li> <li>Change a setting</li> </ul>	Shared Documents Decuments Decuments Decuments Decuments
	Hard Disk Drives
Other Places 🔹	
My Network Places	and the second
My Documents	Designed with Deserve the Change
Shared Documents	Devices with Removable Storage
🤣 Control Panel	

Open the C: drive and rename the folder "dicomserver1414" to "dicomserver":



Open the c:\dicomserver folder and double-click ConquestDICOMServer:



Click "OK" in the window that opens.

New Installation	]		
Conquest DICOM server Vers. 1.4.14 The Netherlands Cancer Institute			
This is a new installation; please select the (ODBC) database to be used, push OK, then fill in the configuration page and push 'Save configuration'. Then proceed to the installation page. Or use the default install button to install without questions.			
Database type Built-in DBASEIII without ODBC (*.DBF)			
CancelK Default install			

### **ARCHIVE INSTALLATION PART 1 (cont.)**

The server configuration window will now open.

Make the following changes:

- \* Change DICOM Server AETitle from CONQUESTSRV1 to FPSRV1 \* Change TCP/IP Port Number from 5678 to 5680
- \* Under "Images on disk are stored:" Click on NKI compressed
- \* Under "Images on disk are named:" Click on V2 (allows NKI compression)
- \* Click in box "Keep Server Alive"
- \* Click the "Save configuration" button

ConQuest DICOM server 1.4.14 - FPSRV	1	
Configuration Installation Maintenance Known DI	COM providers   Browse database   Server status   Query / Move	
This screen contains essential paramete	rs for operation of the ConQuest DICOM server.	Save configuration
Local unique name of this DICOM server (app	lication entity, AE):	Update ODBC data source
TCP/IP port to use (other DICOM systems mu	ist know this number) : 5680	Restore original configuration
Local disk directory to store DICOM images :	□ C: []	
Make directory C Enable JPEG support using OFFIS tools Images on disk are stored:	C:\ C dicomserver Data HEAD_EXP_00097038	Install server as NT service
Uncompressed     NKI compressed     IPEG or NKI     Lossless JPEG C Lossy JPEG     JPEG or Uncompressed		Uninstall server as NT service
Images on disk are named:         • V2 (allows NKI compression)         • DCM (standard format)         Cleanup disk below: (MB)	L <sup>3</sup>	Hide the server (as tray icon)
Cleanup nightly below: (MB)		About this server
Below D MB, move to:	C:\dicomserver\Data Free disk space: 35613 megabyte	Close the server

### **ARCHIVE INSTALLATION PART 1 (cont.)**

The DICOM Server will now switch to the "Installation" Tab:

Do the following:

- \* Click "Verify TCP/IP installation"
- \* Click "Verify database installation"
- \* Click "(Re) initialize database

ConQuest DICOM server 1.4.14 - FPSRV1	
Configuration Installation Maintenance Known DICOM providers Browse database Server status Query / Mov	e
The installation options on this page can be run at any time without losing data. However, active DICOM connections (image copy operations) may be terminated.	Verify TCP/IP installation
Follow the following steps for (re-)installing this program:	Make ODBC data source
The defaults will do fine in most cases. Push the 'Save configuration' button.	
In the 'Installation' page (this one), perform all installation steps (buttons top right) one by one from top to bottom.	Verify database installation
Verify TCP/IP installation: tests communication between the DICOM server and installation programs. This will fail if TCP/IP is not installed on this PC.	(Re)-initialize database
Make ODBC data source: defines the connection between a database on disk and the DICOM server. This fails if ODBC or the dBase driver is not installed. This option is not required when using the "DBASEIII without ODBC" driver	Clear worklist database
Verify database installation: Some ODBC versions (Drivers 3,40,2829) crash when used with this software. This test will fail to loop for 10 times if that is so. If the test fails, install newer ODBC drivers (e.g., supplied with office 97).	
(Re-)initialize database: Deletes existing database tables (if they exist) and generates new tables from any images already stored on disk (if any).	
After these steps, configure your other dicom systems to know this one and put them in in the list on the page 'Known DICOM providers'.	
Output of the installation programs will go here:	Hide the server (as tray icon)
	About this server
	Close the server

If no errors are present after doing each step outlined above, close the dicomserver window. This will quit the dicomserver application. Click "Yes" to the alert box:



# FASTPACS WEB SERVER INSTALLATION

Note:

The FastPACS Web Server requires installation of Microsoft Internet Information Services (IIS) and Microsoft .NET Frameworks Version 2.0. For proper functionality, IIS **must** be installed **prior** to the installation of Microsoft .NET Frameworks Version 2.0. However, on newer versions of XP, .NET Frameworks 2.0 is pre-installed which may cause issues with the proper binding of ASP.NET with IIS. Resolving this issue is described on the next page of this document.

#### **INSTALL IIS:**

Go to Start => Control Panel then double-click Add/Remove Programs:



On the left panel, click "Add/Remove Windows Components":



In the window that opens, place a check mark by "Internet Information Services (IIS)" and click "Next":



Note: You may be prompted to insert the Windows XP Installation disk.

After installation of IIS is complete, go to Start => Control Panel => Administrative Tools => Internet Information Services. This launches the IIS Snap-in Control.

Click the "+" next to the Computer Name then click the "+" next to Web Sites to reveal "Default Web Site".

Right-click Default Web Site and select Properties (below left). Verify there is a tab for ASPNET present (below center). If so, select the ASPNET tab and see if it shows ASP.NET version 2.0xxxxx (below right):

🔁 Internet Information Services	Default Web Site Properties	Default Web Site Properties 🛛 💽 🔀
Elle Action View Help	Directory Security HTTP Headers Custom Errors ASP.NET Web Site ISAPI Filters Home Directory Documents	Web Site         ISAPI Filters         Home Directory         Documents           Directory Security         HTTP Headers         Custom Errors         ASP.NET
Internet Information Services     DICOM-SERVER (local computer)     DICOM-SERVER (local computer)     Web Sites     Web Sites     Explore     Den     Browse     Browse     Browse	Web Site Identification       Description:     Default Web Site       IP Address:     [All Unassigned]       ICP Port:     80   SSL Port	Microsoft ASP.net
Stop Sis Pause as	Connections Cognection Timeout 900 seconds WHTP Keep-Alives Enabled	ASP.NET version:
New → bi All Tasks → 0 br View → 0 c	Enable Logging     Active log format:     W2F Strended Log File Format     V2F	File location: c:\inelpub\www.woot\web.config File creation date: Date not available.
Rename O C Refresh O C Export List O C		File last modified: Date not available. Edit Global Configuration Edit Configuration
Properties	OK Cancel Apply Help	OK Cancel Apply Help

If there is not an ASP.NET tab displayed or if it doesn't <u>by default</u> specify version 2.0xxxxx you <u>must</u> repair/reinstall .NET Frameworks 2.0. To do this, locate and open the file dotnet repair.txt from the latest distribution. Highlight all text in this file and copy it (Cntl-C). Go to Start => Run. Enter cmd in the text entry box and press Enter to open a command line window.

Right-click on the header of the command line window and choose Edit => Paste (below left). The text you have copied should be pasted into the command window (below right). Verify it is correct then press Enter to initiate the .NET repair process.



Allow the repair process to finish. You will receive an alert when it is done. Once done, reboot the computer then check for the presence of the ASP.NET tab that specifies version 2.0xxxxx using the IIS Snap-in Control as described above.

For reference, following is the text that performs the .NET Frameworks 2.0 repair process:

msiexec /fpecmsu {C09FB3CD-3D0C-3F2D-899A-6A1D67F2073F} REINSTALL=ALL /l\*v
%temp%\netfx20sp2\_repair\_log.txt /qb

From the latest Distribution, drag the "DIOWave" and "DIOWaveData" folders directly to the root of the C: drive of the target computer:

		FastPACS Web_1.5.4
3 My Computer		Eile Edit View Favorites Tools Help
File Edit View Favorites Tools	Help	🚱 Back 🔹 🕥 🚽 🏂 Search 📂 Folders 💷
🔄 🕝 Back 👻 🕥 👻 🏂 🔎 Se	earch 🝺 Folders 🔢 🛛	Address 🗁 C:\Documents and Settings\Administrator\Desktop\Distr 2-6-09\FastPACS Web_1.5.4
Address 😨 My Computer		File and Folder Tasks 🛞 DIOWave
System Tasks	Files Stored on This Computer	Make a new folder
View system information	Shared Documents	Publish the Tolder to the dotnet Framework 2.0 Site Specific
Add or remove programs		Share this folder
Change a setting	Hard Disk Drives	GNU License GNU License Text Document 14 KP
Other Places 🛞		
Section 2010 My Network Places	Local Disk (C:)	My Documents Microsoft Corporation Microsoft Corporation
My Documents		Shared Documents
Carl Shared Documents	Devices with Removable Storage	My Computer

Click on "Start" then choose "Run" (below left). Type **cmd** in the window that opens (below right):

Files and Settings Transfer	Run ?	<
Wizard	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.	
All Programs 📡	Obeu: cwq	
Log Off O Turn Off Computer	OK Cancel Browse	

Type the following commands (shown in **bold** below) following the C:> prompt in the DOS window that opens. *Note that there is no space between "binPath" and "=":* 

# sc.exe create "DIO\_STORAGE" binPath= "C:\DIOWave\bin\dio-storage.exe" (It should respond "[SC] CreateService SUCCESS")

#### sc.exe start "DIO\_STORAGE"

(It should respond with the Service Name and other info)

Your window should look similar to the following:

C:\WINDOWS\system32\cmd.ex	e _ [	z ×
Microsoft Windows XP [Versi (C) Copyright 1985-2001 Mic	on 5.1.2600] rosoft Corp.	-
C:\Documents and Settings\A \DIOWave\bin\dio-storage.ex [SC] CreateService SUCCESS	dministrator>sc.exe create "DIO_STORAGE" binPath= "c e"	::
C:\Documents and Settings\A	dministrator>sc.exe start "DIO_STORAGE"	
SERVICE_NAME: DIO_STORAGE TYPE STATE WIN32_EXIT_CODE SERVICE_EXIT_CODE CHECKPOINT WAIT_HINT PID FLAGS	: 10 WIN32_OWN_PROCESS : 2 START_PENDING (NOT_STOPPABLE,NOT_PAUSABLE,IGNORES_SHUTDOWN) : 0 (0x00) : 0x740 : 1440 : 0x740	
C:\Documents and Settings\A	dministrator>_	

You have created the service that allows the FastPACS Web Server to receive DICOM images. You may close the window.

Now set the service you have just created to automatically start upon boot and recover from errors:

Go to Start => Control Panel => Administrative Tools => Services.

Locate "DIO\_STORAGE" in the list, right-click it and choose Properties:

File <u>A</u> ction <u>V</u> iew	Help					
	2 🗈 😰 💷 🔸 🔳 💷 🗪					
🆏 Services (Local)	🍓 Services (Local)					
	DIO_STORAGE	Name 🛆	Description	Status	Startup Type	🛛 Log On As 🏼 🛃
	Stop the service	.NET Runtime Opti	Microsoft	Started	Automatic Disabled	Local System
	Restart the service	Application Layer G	Provides s	Started	Manual	Local Service
		Application Manage	Provides s	startoa	Manual	Local System
		ASP.NET State Ser	Provides s		Manual	Network S.
		Automatic Updates	Enables th	Started	Automatic	Local System
		Background Intellig	Transfers		Manual	Local System
		ClipBook	Enables Cli		Disabled	Local System
		COM+ Event System	Supports S	Started	Manual	Local System
		COM+ System Appl	Manages t		Manual	Local System
		Computer Browser	Maintains a	Started	Automatic	Local System
		🖗 Cryptographic Serv	Provides th	Started	Automatic	Local System
		BCOM Server Proc	Provides la	Started	Automatic	Local System
		🆓 DHCP Client	Manages n	Started	Automatic	Local System
		DIO_STORAGE		Started	Manual	Local System
		🍓 Distributed 🕼 Tra	Maintains li	Started	Automatic	Local System
		🎭 Distributed Transac	Coordinate		Manual	Network S
		Solution Client	Resolves a	Started	Automatic	Network S
		Ser	Allows erro	Started	Automatic	Local System 😒

Under the General tab, change Startup Type to Automatic (below left). Then select the Recovery tab (below right) and change the setting of First Failure, Second Failure and Subsequent Failures from "Take No Action" to "Restart The Service":

DIO_STORAGE Properties (Local Computer) 🛛 🛛 🛛 💽	DIO_STORAGE Properties (Local Computer)
General Log On Recovery Dependencies	General Log On Recovery Dependencies
Service name: DIO_STORAGE	Select the computer's response if this service fails.
Display name: DIO_STORAGE	First failure: Restart the Service
Description:	Second failure: Restart the Service
	Subsequent failures: Restart the Service
Path to executable:	Reset fail count after: 0 days
C: \UTU w ave \utin \dio-storage.exe	Restart service after: 1 minutes
Startup typ <u>e</u> : Manual	Run program
Automatic Manual Service status: Stanee	Program:
Start Stop Pause Resume	Command line parameters:
You can specify the start parameters that apply when you start the service from here.	Append fail count to end of command line (/fail=%1%)
Start parameters:	<u>R</u> estart Computer Options
OK Cancel Apply	OK Cancel Apply

Click "Apply" then click "OK". Close out the open windows.

Go to Start => Control Panel => Folder Options



Click the "View" tab and **Deselect** both "Hide extensions for known file types" and "Use simple file sharing (Recommended)":



Click "Apply" then "OK" and close the open windows.

Go to Start => Control Panel => Administrative Tools => Internet Information Services to launch the IIS Snap-in Control.

Click the "+" next to the Computer Name then click the "+" next to Web Sites to reveal "Default Web Site".

Right-click **Default Web Site** and navigate to New => Virtual Directory:

This creates /DIOWave = C:\DIOWave\wwwroot (Read document)

#### Enter Alias **DIOWave**

Enter Physical Path **c**: \DIOWave\wwwroot Set the following access permission: Read Right-click on *DIOWave*, select Properties to check the property sheet as below:

DIOWave Properties		? ×		
Virtual Directory Documents Directory Security HTTP Headers Custom Errors When connecting to this resource, the content should come from:				
C A redire	ection to a <u>U</u> RL			
Logal Path: C:\DIOW	ave\www.root	Br <u>o</u> wse		
□ Script source access       ▼ Log visits         ▼ Read       ▼ Index this resource         □ Write       □         □ Directory browsing       □				
Application Settings				
Application name: Defa	ult Application	Create		
Starting point: <defa execute="" none<="" permissions:="" td=""><td>ault Web Site&gt;</td><td>Configuration</td></defa>	ault Web Site>	Configuration		
Application Protection: Medi	ium (Pooled)	Unioad		
01	K Cancel Appl	y Help		

Right click on **DIOWave** and navigate to New => Virtual Directory:

This creates /DIOWave/scripts = C:\DIOWave\scripts (Executable for ISAPI)

#### Enter Alias **scripts**

### Enter Physical Path c:\DIOWave\scripts

Set the following access permission: *Execute* 

Right click on scripts, select Properties, set application protection to Low (IIS Process):

scripts Properties		<u>? ×</u>
Virtual Directory Docume	nts Directory Security HTTP Headers	Custom Errors
When connecting to this	resource, the content should come from:	
•	A directory located on this computer	
07	A share located on another computer	
O <i>_</i> _	A redirection to a <u>U</u> RL	
Logal Path: c:\	DIOWave\scripts	Br <u>o</u> wse
Scrip <u>t</u> source acces <u>Read</u> <u>W</u> rite Directory <u>b</u> rowsing	s 🔽 Log <u>v</u> isits V Index this resource	
Application Settings		
Application name:	scripts	Remove
Starting point:	<default site\scripts<="" td="" web=""><td>Configuration</td></default>	Configuration
Execute Permissions:	Scripts and Executables	
Application Protection:	Low (IIS Process)	Unjoad
	OK Cancel Apply	Help

Right click on **DIOWave** and navigate to New => Virtual Directory:

This creates /DIOWave/StudyBrowser.NET = C:\DIOWave\webapp\StudyBrowser.Net (Executable for scripts)

Enter Alias StudyBrowser.NET

### Enter Physical Path c:\DIOWave\webapp\StudyBrowser.NET

Set the 2 following access permissions: *Read, Run Scripts* Right-click on *StudyBrowser.NET,* select Properties, set application protection to *High (Isolated):* 

StudyBrowser.NET Properties	<u>? ×</u>
Virtual Directory Documents Directory Security HTTP Headers	Custom Errors
When connecting to this resource, the content should come from:	
<ul> <li>A directory located on this computer</li> </ul>	
○ A share located on another computer	
C A redirection to a <u>U</u> RL	
Logal Path: C:\DIOWave\webapp\StudyBrowser.NET	Br <u>o</u> wse
Script source access     ✓ Log visits     ✓ Bead     ✓ Index this resource     ✓// Undex this resource     ✓// Undex this resource     ✓// Directory browsing	
Application Settings	
Application name: StudyBrowser.NET	Remove
Starting point: <defa\studybrowser.net< td=""><td>0 C C 1</td></defa\studybrowser.net<>	0 C C 1
Execute Permissions: Scripts only	
Application Protection: High (Isolated)	Unjoad
OK Cancel Apply	Help

Close open windows and exit the IIS Snap-in Control

In Windows explorer go to C:\DIOWave, right-click on the folder and select Properties.

Select the Security Tab then click Add to add the following users and give them Modify access rights:

#### ASPNET

IUSR\_MACHINE NAME (where MACHINE NAME is the name of the computer)

DIOWave Properties 🛛 🕐 🔀	DIOWave Properties
General Sharing Security Web Sharing Customize	General Sharing Security Web Sharing Customize
Group or user names:	Group or user names:
Administrator (WEB-WS\Administrator)     Administrators (WEB-WS\Administrators)     ASP.NET Machine Account (WEB-WS\ASPNET)     CREATOR OWNER     SYSTEM     Add <u>Remove</u>	Administrators (WEB-WS\Administrators)         ASP.NET Machine Account (WEB-WS\ASPNET)         CREATOR OWNER         Internet Guest Account (WEB-WS\UUSR_WEB-WS)         SYSTEM         Add
Permissions for App-INE I     Allow     Deny       Machine Account     Allow     Deny       Full Control     Image: Control in the image	Account Allow Deny Account Allow Deny Full Control Modify Read & Execute List Folder Contents Read Write Scancial Derministons or for advanced settings, Advanced
OK Cancel Apply	OK Cancel Apply

Click "Apply" then click "OK".

Important Note: If the user ASPNET cannot be added, it indicates a problem with .NET Frameworks 2.0. You then must return to the repair process on page 9 and repair it. Bummer.

Now do the same process as above for the folder at C:\DIOWaveData

Go to Start => Control Panel => Administrative Tools => Internet Information Services to launch the IIS Snap-in Control.

**REDIRECT HOME DIRECTORY:** 

a) Right click on Default Web Site & choose Properties

- b) Select the Home Directory tab
- c) "A directory located on this computer" should be checked
- d) Click BROWSE then navigate to c\diowave\webapp\studybrowser.net
- e) Click OK
- SET DEFAULT DOCUMENT:
- a) Right click on StudyBrowser.NET & choose Properties
- b) Select the Documents tab
- c) See that Enable Default Document is checked
- d) Click ADD then type "default.aspx"
- e) Move default.aspx to the top of the list, then click Apply

When finished, close out all open windows and Reboot the computer.

Launch Internet Explorer and go to http://localhost

If all goes well you should see this:

🖉 FastPACS Browser - Window	<i>v</i> s Internet Explorer
💽 🗸 🙋 http://localhost/	
😭 🏟 🌈 FastPACS Browser	
Precision FastPACS	FastPACS Web
	Patient Information ID: Matches and Name: Contains Find by Patient's info
	Study Date       Month:     Date:       Year:       Today   Find by Study Date
	Select Modality:
	Clear     Find by combinations       v 1.53     > On-Line Support
	Not for primary interpretation

Quit Internet Explorer and go to c:\DIOWave\webapp\StudyBrowser.NET

Open query.aspx then press Cntl-F to open a "find" window and search for fastpacs

Upon the second occurrence of fastpacs, highlight the words FastPACS Web:

```
<DIV STYLE="text-align:center; width:<%=box1_width%>em; margin-l
<SPAN STYLE="font-size:large;">FastPACS web</mark></SPAN>]
```

Replace this text with the name of the customer's institution:

```
<DIV STYLE="text-align:center; width:<%=box1_width%>em; margin-left:
<SPAN STYLE="font-size:large;">XYZ Clinic</SPAN>
```

Now save the document.

# **iQ-VIEW INSTALLATION**

Launch the iQ-VIEW installer from the desktop of the target computer. Accept the defaults for the installation *EXCEPT CHANGE THE PORT FROM 104 TO 4000.* 

With iQ-VIEW running, select the "Network" tab and click the icon in the upper right hand corner that appears as 3 networked computers (below left). In the window that opens, single-click to highlight the first entry (below right):

		DICOM CON	riguration				
		Query/Retrie	ve DICOM Print Mod	ality Worklist			
		Test	Logical name		DICOM AE title	IP address	Port number
	_	ECHO	Conquest(Example)	- <b>b</b>	CONQUESTSRV1	127.0.0.1	5678
Query Configuration				v			
Network Database Filesystem Email							
	5	Logical nam	e	DICOM A	Etitle	IP address	Port number
		Conquest(E	Add	CONQU	Clear	Change	Save

Enter the new values in the lower part of the window:

Logical Name: ARCHIVE DICOM AE Title: FPSRV1 IP Address: 127.0.0.1 Port Number: 5680

Dicomic	onfiguration			
Query/Re	trieve DICOM Print Modality V	Vorklist		
Test	Logical name	DICOM AE title	IP address	Port number
ECHO	Conquest(Example)	CONQUESTSRV1	127.0.0.1	5678
<				>
< Digical n	ame	DICOM AE title	IP address	Port number
Logical n ARCHIV	vame 12	DICOMAE title FPSRV1	IP address 127.0.0.1	Port number 5680
Logical n ARCHIV	iame 12	DICOM AE INe FPSRV1	IP address 127.0.0.1	Port number 5680

Click "Change" then click "Save". You may now quit iQ-VIEW.

Go to C:\Program Files\iQ-VIEW then right-click on iQ-VIEW.exe and select "Pin to Start Menu". Go to the Start Menu and right-click on "iQ-VIEW.exe" and rename this file "iQ-VIEW".

Go to Start => All Programs => Startup and right-click on Startup. Choose Open. This will open a new window. Return to the C:\Program Files\iQ-VIEW window. **Right-click** and drag on iQ-VIEW.exe and move your mouse to the Startup window. Release the right mouse button and choose to **place a shortcut** in the location.

Open the file custom.ini located at C:\Program Files\iQ-VIEW with Notepad. Navigate to the line that begins with StudyBrowserForm.StudyGrid.Lines[15]. Remove all text to the right of the equal (=) sign then save the file and close it.

Navigate to C:\dicomserver and double-click the file dicom.ini (NOT dicom.sql)

Insert the following text at the end of this file:

```
# Forwarding
ExportConverters = 2
ExportConverter0 = FORWARD TO DIO_STORAGE
ExportConverter1 = FORWARD TO IQSERVER
IgnoreOutOfMemoryErrors = 1
```

IMPORTANT: Be sure there is a space both before and after the equal sign (=).

Your file should look like this:



Save the file and close it.

Double-click ConquestDICOMServer.exe:



Select the "Known DICOM Providers" tab:

Remove any existing entries and enter the following:

FPSRV1	127.0.0.1	5680	un
DIO_STORAGE	127.0.0.1	104	un
IQSERVER	127.0.0.1	4000	un
*	*	*	un

The "Known DICOM Providers" window should look like this:

ConQuest DICOM serve	1.4.14 - FPSRV1				
Configuration   Installation   Mai	ntenance Known DICOM pro	viders Browse data	base   Server status   Query	/ Move	
/* *********	****	********	****		Course Maine East
* DICOM AE (Appli	cation entity) -> :	IP address /	* Port map *		Save tris list
* (1h1S 1S file A	LRNEMA MAP)		*		Restore this list
* All DICOM system * Conquest DICOM :	ns that want to re- server must be lis:	rieve images ed here with	correct *		
* AE name, (IF ad: * The first entry	is the Conquest s	na port num vstem as exam	er. * ple. *		
* * The syntax for	each entry is :		*		
* AE <ip adres<="" td=""><td>ss Host name&gt; po:</td><td>rt number o</td><td>ompression * *</td><td></td><td></td></ip>	ss Host name> po:	rt number o	ompression * *		
* For compression * j1, j2=lossless	see manual. Values jpeg;j3j6=lossy ;	are un=unco peg;n1n4=n	mpressed; * ki private *		
*	******	********	********************		
FPSRV1	127.0.0.1	5680	un		
IQSERVER	127.0.0.1 127.0.0.1	104 4000	un un		Ν
*	*	*	un		45
					Hide the server (as tray icon)
					About this server
1					Llose the server

When done, click "Save This List".

Now select the "Configuration" tab.

Click the button "Install Server as NT Service" as shown below. Wait several seconds to allow the AETitle entry to gray out while a service is being created:

ConQuest DICOM server 1.4.14 - FPSRV	1	
nfiguration Installation Maintenance Known D	COM providers Browse database Server status Query / Move	
This screen contains essential paramete	rs for operation of the ConQuest DICOM server.	Save configuration
Local unique name of this DICOM server (app	olication entity, AE) : FPSRV1	Update ODBC data source
TCP/IP port to use (other DICOM systems mu	ist know this number) : 5680	Restore original configuration
Local disk directory to store DICOM images :	📼 c: []	
Make directory	CV CV	
Enable JPEG support using OFFIS tools	data	Install server as NT service
Images on disk are stored:	D dbase	45
Uncompressed     NKI compressed     C IPEG or NKI	printer_files	Uninstall server as NT service
C Lossless JPEG C Lossy JPEG		
C JPEG or Uncompressed		
Images on disk are named:		
<ul> <li>V2 (allows NKI compression)</li> </ul>		
O DCM (standard format)		Hide the server (as tray icon)
Cleanup disk below: (MB) 0		
Cleanup nightly below: (MB)		About this server
Below 0 MB, move to:	C:\dicomserver\data	
🔽 Keep Server Alive	Free disk space: 35315 megabyte	Close the server

Close the server window. Click "Yes" at the subsequent dialog box.

Go to Start => Control Panel => Administrative Tools => Services.

a 00111000							
ile <u>A</u> ction <u>V</u> iew	Help						
📧 🖆							
🖕 Services (Local)	Services (Local)						
	FPSRV1	Name 🛆	Description	Status	Startup Type	Log On As	2
		🦓 .NET Runtime Opti	Microsoft		Manual	Local System	
	Stop the service	Alerter	Notifies sel		Disabled	Local Service	
	Restart the service	Application Layer G	Provides s	Started	Manual	Local Service	
		Application Manage	Provides s		Manual	Local System	
		ASP.NET State Ser	Provides s		Manual	Network S	
		Automatic Updates	Enables th	Started	Automatic	Local System	
		Background Intellig	Transfers		Manual	Local System	
		ClipBook	Enables Cli		Disabled	Local System	
		COM+ Event System	Supports S	Started	Manual	Local System	
		COM+ System Appl	Manages t	Started	Manual	Local System	
		🖓 Computer Browser	Maintains a	Started	Automatic	Local System	
		🖏 Cryptographic Serv	Provides th	Started	Automatic	Local System	
		DCOM Server Proc	Provides la	Started	Automatic	Local System	
		DHCP Client	Manages n	Started	Automatic	Local System	
		DIO_STORAGE		Started	Automatic	Local System	
		Distributed Link Tra	Maintains li	Started	Automatic	Local System	
		Distributed Transac	Coordinate		Manual	Network S	
		DNS Client	Resolves a	Started	Automatic	Network S	
		Error Reporting Ser	Allows erro	Started	Automatic	Local System	
		Event Log	Enables ev	Started	Automatic	Local System	
		Fast User Switching	Provides m	Started	Manual	Local System	
		FPSRV1		Started	Automatic	Local System	
		🖏 Help and Support	Enables He	Started	Automatic	Local System	
		HTTP SSL	This servic		Manual	Local System	
		🖏 Human Interface D	Enables ge		Disabled	Local System	
		🤹 IIS Admin	Allows adm	Started	Automatic	Local System	
		🦓 IMAPI CD-Burning	Manages C		Manual	Local System	
		indexing Service	Indexes co		Manual	Local System	
	Extended Standard	-					

Right-click on FPSRV1 in the Services list and choose Properties.

Click the "Recovery" tab and change each entry to "Restart the Service":

FPSRV1 Properties (Loca	l Compi	ıter) 🛛 🤶 🔀				
General Log On Recovery	General Log On Recovery Dependencies					
Select the computer's respon	ise if this s	service fails.				
<u>F</u> irst failure:	Restart the Service 💌					
Second failure:	Restar	t the Service 🛛 👻				
S <u>u</u> bsequent failures:	Restar	t the Service 🛛 👻				
Reset fail c <u>o</u> unt after:	0	days 📐				
Restart ser <u>v</u> ice after:	1 minutes					
Program Program		<u>B</u> rowse				
Command line parameters:	nd of com	mand line (/łail=%1%)				
		Cancel Apply				

Click "Apply" then click "OK". Close the open windows.

### Reboot the computer.

# **INSTALLATION OF HELPER APPLICATIONS**

### MICROSOFT ACCESS AND EXCEL

Now that the Core Applications have been installed, there are several additional applications that must be installed and configured.

Insert the Microsoft Office disk, Install Office 2003 (below left), then choose "Custom Install (below right):

Microsoft Office 2003 AIO		🛃 Microsoft Office 2003 Setup	
Coffice		Microsoft Office Professional Edition 2003	<u>Ş</u> a
Welcome to Microsoft	Office 2002	Type of Installation	
welcome to microsoft		Recommended Install	Description
			Customize your Microsoft Office installation
Cince 2003		or choose another type	by choosing which features to install on your computer. Recommended for
		Complete Install	advanced users.
		Minimal Install	
Visio 2003	Office		
Microsoft Office		14	
<b>Project</b> Profession	al 2003		
Microsoft:Office			Notes To Constitution and the Minister of the Tolescond
<b>Cia</b> . <b>OneNote</b> 2003			Explorer 6.0 or later. For more information,
Barrata Standalana IS	0-		click the Help button.
Create Standalone IS	oos	Install to: C:\Program Files\Microsoft Office	Browse
Exit 🕞 Release Notes		Help	< Back Next > Cancel

De-select all items except Access and Excel then click "Next" to proceed with the installation:

🛃 Microsoft Office 2003 Setup					
Microsoft Office Professional Edition 2003	Ca				
Custom Setup					
Select the Microsoft Office 2003 applications yo	Select the Microsoft Office 2003 applications you would like to install:				
Word Deblisher	R				
Excel					
🖪 📃 PowerPoint 🛛 🔀 📃 InfoPath					
Outlook					
InfoPath requires Microsoft Internet Explorer version 6.	0 or later.				
$\Box$ Choose advanced customization of applications.					
	Space Required on C: 492 MB				
	Space Available on C: 34 GB				
< <u>B</u> ack	Next > Cancel				

Allow the installer to finish then remove the CD.

## **DICOM PING**

From the Distribution, drag the DICOM Ping folder to the root of the C: drive of the target computer:

) – 🎓 🔎 si	earch 😥 Folders 🛄 •	File and Folder Tasks	
nputer			Daily Backup
information ve programs	Files Stored on This Computer           Shared Documents         Administrator's Documents	Rename this folder     Move this folder     Copy this folder     Copy this folder     Bublich this folder to the     Web	
tting	Hard Disk Drives	Share this folder           Share this folder's files           Delete this folder	aconserver
Places Its	Local Disk (C:)	Other Places	iQ-VIEW 2.5.0c

Navigate to the folder C:\DICOM Ping and right-click on DICOMPing.exe and choose "Pin to Start Menu":

DICOM Ping	
File Edit View Favorites Tools Help	
🚱 Back 🔹 📀 🚽 🏂 🔎 Search 👔	Folders
Address 🔂 C:\DICOM Ping	
File and Folder Tasks 🛞 🌾	DICOM Ping.exe
Rename this file	Open Run as
😥 Move this file	Pin to Start menu
Copy this file	Send To
Publish this file to the Web	Cut
X Delete this file	Сору
	Create Shortcut
Other Places	Rename
🥪 Local Disk (C:)	Properties

Go to Start then right-click on "DICOMPing.exe" and select "Rename". Rename this file "DICOM Ping"



### **JETCU40**

JETCU40 is an Application for compacting the FastPACS Web MDB Database.

From the Distribution drag jetcu40.exe to the desktop of the target computer, then double-click to launch.

Click "Browse"

Jet Compact Utility 4.0	
Please type the location where you want to place the e	xtracted files.
1	Browse
OK	Cancel

Expand "DIOWave" then single-click to highlight "db". Click "OK":

Browse for Folder	? 🗙
Please select a folder to store the extracted files.	
🕀 🛅 compaq	~
DICOM Ping	
😥 🧰 dicomserver	
🖃 🧰 DIOWave	
🛅 bin	÷
	-
- Cingetc	
logs	
scripts	
🛅 tmp	
🗉 🧰 webapp	
www.root	~
DIOWaveData	
OK Cance	

Click "OK" at the next window:



Installation is nearly instantaneous. Click "OK" when it is finished:

Jet Compact Utility 4.0 🛛 🛛		
(į)	Finished extracting files.	
	OK	

### **IIS60RKT**

IIS60RKT (IIS 6.0 Resource Kit) is a suite of tools to enhance Internet Information Services (IIS). **SelfSSL** is the only tool installed from this suite. This tool installed will allow creation of a Self-Signed Certificate to permit secure, 128-bit encrypted communication between web users and the FastPACS Web Server.

From the Distribution drag iis60rkt.exe to the desktop of the target computer, then double-click to launch.

Click "Next" to continue:



Agree to the License Agreement and fill in the user info on the next two screens.

Choose "Custom Installation" (below left) then accept the default location and click "Next" (below right):

InstallShield Wizard	InstallShield Wizard
Setup Type Choose the setup type that best suits your needs.	Choose Destination Location Select folder where Setup will install files.
Please select a setup type.	Setup will install the IIS 6.0 Resource Kit Tools in the following folder.
Complete     Just     All program features will be installed. (Requires the most disk space.)	Destination Folder C:\Program Files\IIS Resources\ Browse
Custom Choose which program features you want installed. Recommended for advanced users.	To install to a different folder, click Browse and select another folder.
InstallShieldCancel	InstallShield

De-select all items in the list except SelfSSL 1.0 then click "Next" to proceed and finish the installation:



# **CREATE A SECURE SELF-SIGNED CERTIFICATE**

Go to Start => All Programs => IIS Resources => SelfSSL => SelfSSL:

K-Pacs				
m DICOMReader I	•			
i Microsoft Office	•			
🛅 IIS Resources 🔹 🕬	•	🕽 SelfSSL 🔹 🕨	🚾 SelfSSL	Fast <b>PACS</b> We
📶 🔤 gMeIn	Ē	IIS 6.0 Tools Documentation	SelfSSL Documentation	
Log Off 🚺 Turn Off Compu	Jter			
FastPACS Web_1.5.4				

This will open a command prompt window. Type in the following text:

```
selfssl.exe /N:CN=PRECISION /V:1095
```

Note: You may insert the name of the customer's institution instead of the text **PRECISION** as shown above. Note that no spaces are allowed (i.e. **XYZ IMAGING CENTER** becomes **XYZ\_IMAGING\_CENTER**).

Press "Y" and Enter when asked if you want to replace the SSL settings for site 1.

You should receive a message that "The self signed certificate was successfully assigned to site 1". If you get a message that indicates an error, it invariably is due to mistyping. Re-enter the text again and be careful to insert spaces exactly where shown above.



Click "Apply" then "OK". Close the window.

OK Cancel Apply Help

## DICOMREADER

Launch the DICOMREADER Installer, accept the default settings, and proceed with the installation:



When the installation is finished, click on the settings tool (it appears as a wrench):

DIC	Reader	N	
	Files	Errors	73
Scan 🔿			×
Send 🔿			×
		Q	8

Place check marks next to "start application minimized (as tray icon)" and "ask for new patient data":

DICOMReader - Options
Application
Temporary directory for DICOM send jobs
C:\temp
use file extension filter edit filter list
scart application minimized (as tray icon)
open media tray after reading (automatically)
✓ show window "stays on top"
verbose (shows error information in status window)
DICOM transfer ✓ send to a standard destination (automatically)
use forward rules edit rules
anonymize patient data edit parameter
✓ ask for new patient data
do not allow transfer of compressed images
NOTE: compressed images will allways be converted
DICOM stations DICOM options
ОК

### **DICOMREADER (cont.)**

Click the DICOM Stations button:

ao not allow transfer or compressed images					
NOTE: compressed images will allways be converted					
DICOM stations DICOM options					
°					

Enter the password: **DICOMREADER** (in CAPS)



Now enter the information for the WebWorkstation Archive:

Alias:	ARCHIVE	
Address:	127.0.0.1	$\longrightarrow$
Port:	5680	,

itation	
Alias	
ARCHIVE	
AE Title	
FPSRV1	
Address	
127.0.0.1	
Port	
5680	

Click "OK" when finished.

### **DICOMREADER** (cont.)

Select "ARCHIVE" from the drop-down menu as the default destination then click "OK":

OICOMReader - Options	DICOMReader - Options
Application	Application
Temporary directory for DICOM send jobs	Temporary directory for DICOM send jobs
C:\temp	C:\temp
✓ use file extension filter edit filter list	✓ use file extension filter edit filter list
✓ start application minimized (as tray icon)	start application minimized (as tray icon)
🗹 open media tray after reading (automatically)	open media tray after reading (automatically)
show window "stays on top"	show window "stays on top"
verbose (shows error information in status window)	✓ verbose (shows error information in status window)
DICOM transfer	DICOM transfer
send to a standard destination (automatically)	send to a standard destination (automatically)
~	
	use forward rules edit rules
anonymize patient data edit parameter	anonymize patient data edit parameter
sk for new patient data	sk for new patient data
on not allow transfer of compressed images	do not allow transfer of compressed images
NOTE: compressed images will allways be converted	NOTE: compressed images will allways be converted
DICOM stations DICOM options	DICOM stations DICOM options
ОК	

Minimize the DICOMREADER window (below left), then exit DICOMREADER by right-clicking the disk icon in the right area of the task bar (below right). **Only when you quit DICOMREADER in this manner after the initial installation does it permanently save your settings:** 

	Standard Destination
ReaderIVI	Info
Files Errors	Start reading a media manually
Scan 🔿 🛛 - 🛛 💌	Options
Send 🔿 🛛 - 🔣	Open
	Exit
<u> </u>	

Go to C:\Program Files\DICOMReader then **right-click** and drag on DICOMReader.exe. Release and select to **create a shortcut in this same directory.** Right-click on the shortcut and select "Pin to Start Menu". Go to the Start Menu and right-click on "Shortcut to DICOMReader.exe" and rename this file "DICOMReader".

Go to Start => All Programs => Startup and right-click on Startup. Choose Open. This will open a new window. Return to the C:\Program Files\DICOMReader window. Right-click and drag on the DICOMReader **shortcut** you have created there and move your mouse to the Startup window. Release your right mouse button and choose to **copy** this file there.

## DAILY BACKUP

This is an application that runs as a Scheduled Task to perform daily backups of the Archive and Web databases. This makes recovery easier and less painful in the event of database corruption.

From the Distribution, drag the Daily Backup folder to the root of the C: drive of the target computer:



Navigate to c:\Daily Backup\Bin\ and open the system.ini file by double-clicking on it.

Check that the last two lines of this file read precisely as follows:

```
c:\DIOWave\db\ = c:\DIOWaveBackup\db\@Weekday\
c:\dicomserver\data\dbase = c:\dicomserverBackup\data\@weekday\
```

If they do not, change them to read as above.

Close the open windows.

Now Daily Backup must be configured to run as a Windows Scheduled Task.

Go to Start => Control Panel => Scheduled Tasks and double-click "Add Scheduled Task"

Click "Next" (below left), then click "Browse" (below right):



### DAILY BACKUP (cont.)

Navigate to c:\Daily Backup\Bin and single-click to highlight "DailyBackup.exe". Click "Open":

Select Program	to Schedule						? 🗙
Look in:	🚞 Bin		*	3 💋	ø	•	
My Recent Documents Desktop	Cugs DailyBackup.ext robocopy.exe system.ini	3					
My Documents							
	File <u>n</u> ame:	DailyBackup.exe			*		Coen
My Network	Files of type:	Programs			*		Cancel

Choose to perform this task daily (below left) and designate an appropriate time-of-day (below right):



Enter the password of the user of this machine (see "**Schedule Task Problems**" on next page regarding a potential issue with this). Then click "Finish":



### DAILY BACKUP (cont.):

Right-click on the Daily Backup Scheduled Task and choose "Run" to test that it works. If successful, the column "Last Run Time" should display the current time:



### Scheduled Task Problems:

Windows XP with Service Pack 3 has a known issue when attempting to create a Scheduled Task wherein it will reject your password and not run the task. If you receive a message stating that the Scheduled Task may not run because of problems with your permissions use the following workaround:

- \* Delete the Scheduled Task you've just created by right-clicking on the task and choose "Delete".
- \* Create the task again but use NT AUTHORITY\SYSTEM as the USER. No password is necessary.

## **OTHER ITEMS**

#### Adobe Reader.

From the Distribution or via direct download, Install Adobe Reader 9 on the target system. After installation, check for proper launch of Adobe Reader by launching iQ-VIEW then clicking on the help icon on the main screen:



Adobe Reader should launch. Accept the Adobe Reader license agreement. The iQ-VIEW User Guide should now be displayed. Quit iQ-VIEW. Then delete the Adobe Reader and acrobat shortcuts that have been deposited on the desktop.

#### Power Settings.

Go to Start => Control Panel => Power Options and set the system to Never Hibernate and Never Standby. Hard Drives should be set to Never Turn Off. The monitor should be set to power save after 10 minutes. The selected Screen Saver should be "None".

ower Options Prope	rties ?
Power Schemes Advan	ced Hibernate UPS
Select the por this computer. the selected s	wer scheme with the most appropriate settings for Note that changing the settings below will modify cheme.
Power schemes	
Home/Office Desk	✓
	Save As Delete
Settings for Home/Offi	ice Desk power scheme
Turn off <u>m</u> onitor:	After 10 mins
Turn off hard disks:	Never
System standby:	Never
	OK Cancel Apply

#### Remote Access.

Launch Internet Explorer and navigate to www.realvnc.com. Download the free version of the Windows executable. After downloading, launch the installer and accept the default settings. At the end of the installation click the "Configure" button and type **pdsisupport** as the password in the two entry areas that appear. A VNC icon should now be present in the lower right task bar. VNC is primarily used for access to this machine when on the customer's LAN.

LogMeIn must also be installed and linked to our Master Account for WAN support of this machine.

# **CLEANING UP**

Make it a professional installation:

From the Distribution, copy the desktop pattern WebWorkstation Desktop2.jpg to the My Pictures folder located in My Documents on the target computer.

Right-click on the computer desktop and select this file as your desktop pattern.

Move all files remaining on the desktop to the Recycle Bin and empty it.

The only thing that should be left on your desktop is the Recycle Bin.

