

SonarWiz PC - OS Recommendations

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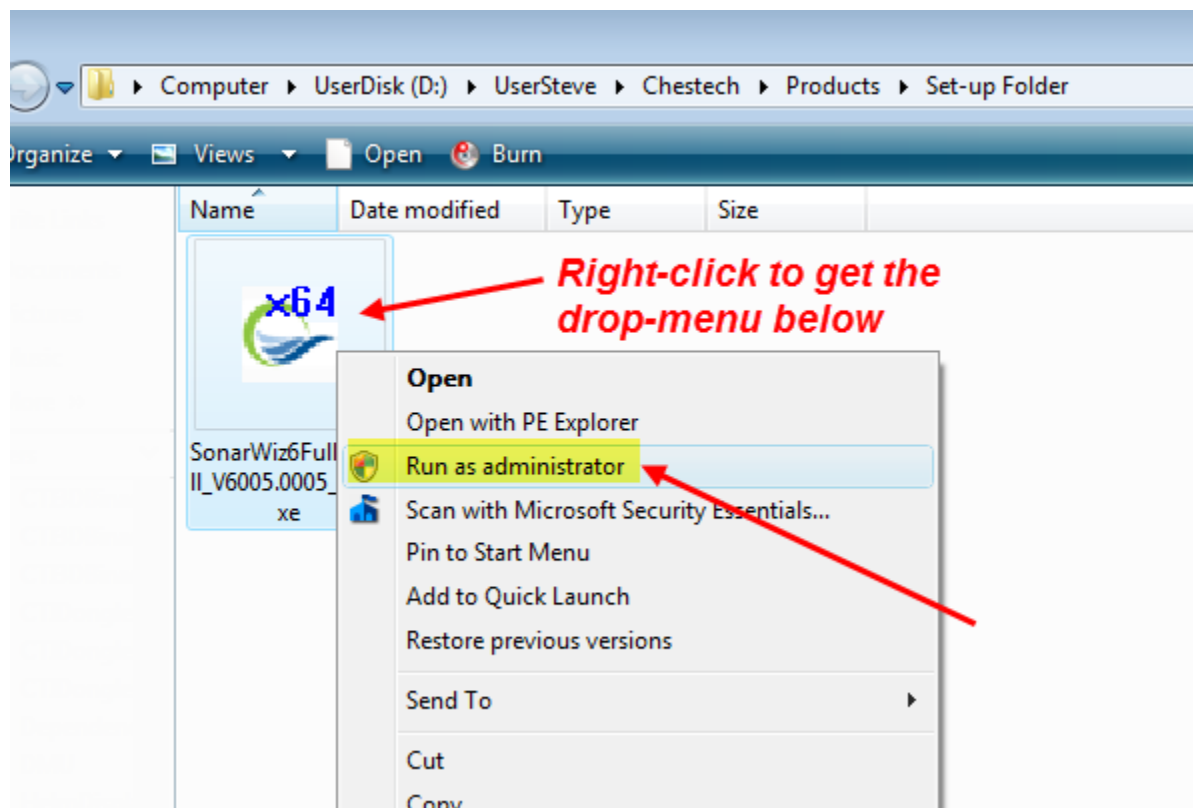
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1 PC / OS Requirements for SonarWiz Applications

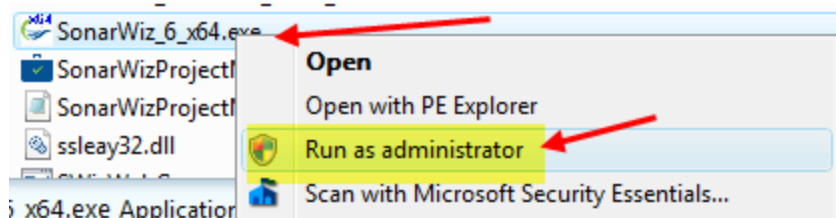
1.1 Administrator Level Userid Needed - Installing SonarWiz

You need to have administrator privilege on the userid where you have logged on to the PC, when you install and run SonarWiz, OR you can run the self-installer, and the application, as administrator. To run the self-installer as administrator, right-click on the EXE file and select to do so like this:

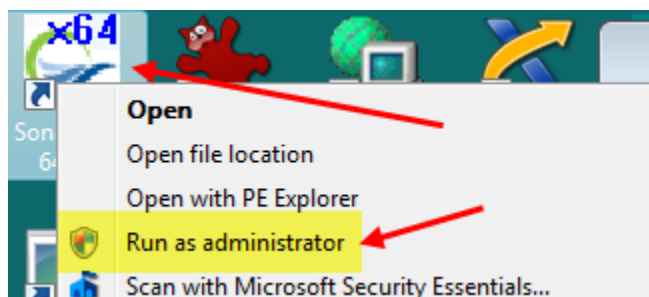


1.2 Administrator Level Userid Option - Running SonarWiz

You can have administrator privilege on the userid where you have logged on to the PC, when you run SonarWiz, OR you can run the application as administrator. We also have many users running SonarWiz, after it has been installed, and they run it, **logged onto the PC as a non-administrator**. Either way seems to work fine. To run SonarWiz as administrator, right-click on the SonarWiz 6 EXE file and select to do so like this:



Or you can do the same with the SHORTCUT on your desk-top, for SonarWiz:



1.3 Recommended Operating System / PC Requirements - Running SonarWiz

Here's what our SonarWiz User Guide recommends for a PC platform for running the SonarWiz application, in section 1.3.1:

SonarWiz User Guide section 1.3.1 Recommended PC Configuration

Minimum: Pentium 4, 4GB RAM (8 GB R/T PC) 2-GB HD space

(NOTE: 2GB was currently the recommended minimum RAM configuration for modern SonarWiz versions up to 2013, though less RAM was required in 2010-2012. Since 2014 - 4GB RAM is required.)

Operating Systems: Windows7, Windows 8, or Windows 10 (32 and 64-bit versions)

Multi-threading/32 Bit/64 Bit Support: SonarWiz currently supports multi-core processors on 32 and 64 bit architecture however the 32-bit version of SonarWiz currently only runs in 32 Bit mode.

Since January, 2016, 64-bit SonarWiz has been available to customers in the SonarWiz download section of www.chestech-support.com . FAQs regarding this new option are described in this document on the support web-site:

www.chestech-support.com/download/ctisupport/Sonarwiz_6/UserDocs/CTI_TN-2016-01-21_64-bit_SonarWiz.pdf

As of SonarWiz release 6.04.0001 3/7/2016, full production support for a 64-bit OS and chipset architecture is supported.

LICENSING NOTES: The Sentinel SuperPro license key (dongle) used to license SonarWiz requires a physically available USB port to plug it in, whether this is on the

PC running SonarWiz, or on a networked PC supporting a network dongle license. You may run SonarWiz on a PC while logged in directly on that PC, or when accessing the PC via Remote Desktop, as long as that instance of SonarWiz on the PC is able to obtain licensing from a local or network dongle. Only one instance of SonarWiz at a time may run on a single PC.

1.4 Minimum and Optimum - Operating System / PC Requirements

So that's our official statement on minimal PC requirements. We recommend 32-bit or 64-bit Windows7, or 10, and 8+ GBytes of RAM - more is better. We have some customers running 32GB of RAM on super PCs - excellent resource if you can afford it!

1.5 OS / Platform Environments NOT Recommended or Supported

Specifically, we do not recommend, or support, installation or use of SonarWiz in older Microsoft operating systems (e.g. Windows2000, WindowsME, Windows98, WindowsXP, or VISTA), nor virtual or emulated Windows environments (e.g. running Windows under WINE on a LINUX or other OS, or trying to run it on an Apple Macintosh, under Parallels Desktop or any other Windows-emulator). It is possible that you could get SonarWiz to run on an unsupported platform, but we don't test the application on these platforms, and could not help if anything went wrong for you.

1.5.1 Specific Support Issues with WindowsXP

Microsoft no longer supports WindowsXP, so Chesapeake Technology also advises against using SonarWiz on a WindowsXP PC. Their termination of support is explained on-line here:

<https://support.microsoft.com/en-us/help/14223/windows-xp-end-of-support>

The following quoted **blue text** below, comes directly from the URL above:

Windows XP Support has Ended

1.5.1.1 What is Windows XP end of support at Microsoft?

"Microsoft provided support for Windows XP for the past 12 years. But the time came for us, along with our hardware and software partners, to invest our resources toward supporting more recent technologies so that we can continue to deliver great new experiences. As a result, technical assistance for Windows XP is no longer available, including automatic updates that help protect your PC.

Microsoft has also stopped providing [Microsoft Security Essentials](#) for download on Windows XP. If you already have Microsoft Security Essentials installed, you'll continue to receive antimalware signature updates for a limited time. However, please note that Microsoft Security Essentials (or any other antivirus software) will have limited effectiveness on PCs that do not have the latest security updates."

1.6 BEFORE YOU BUY - 32-bit or 64-bit - that is the question!

Before you buy a new laptop or PC to use running SonarWiz, it is a great idea to verify that the installation CD or download self-installing EXE file will install and run on that PC without errors.

If the evaluation download of SonarWiz will run on the PC, then the purchased software will also run, licensed by a dongle.

1.7 Platform Recommendations – 32-bit and 64-bit considerations

When we are required to supply a PC with our software we normally just quote the “current technology” since it changes so fast. That said, we can relay some colloquial information about what customers have been using without complaint, and you can make your own specific vendor choice for a PC to try.

Any PC has performance limitations, and a slower PC might need to reduce real-time performance load during real-time acquisition, to maintain data through-put. For boat conditions, a water-resistant PC is a great idea, and several of our customers are using a water-resistant, ruggedized PC successfully.

The main 32-bit SonarWiz application is limited to direct access of a 4GB RAM space, but virtual memory is also used, so more RAM is really better. Beginning in January, 2016, when the BETA version 64-bit SonarWiz has become available, users can expect a real performance increase with more RAM, since the 64-bit SonarWiz can directly access far more than 4GB of RAM. Please see this document for performance enhancement expectation details:

www.chestech-support.com/download/ctisupport/Sonarwiz_6/UserDocs/CTI_TN-2016-01-21_64-bit_SonarWiz.pdf

To take advantage of this evolving capability in SonarWiz (64-bit production available as of 3/5/2016), you should **consider getting a 64-bit chipset and 64-bit OS in any new PC you are purchase**, where SonarWiz is a main application you will be using.

1.8 Graphics Card Requirements

In general, any high-end high-resolution monitor and graphics card combo will work great with SonarWiz for post-processing. Typical configurations which are optimal include 32-bit color presentation and 1680 x 1050 pixel settings on the monitor, and a graphics card capable of presenting at that resolution for color and pixel extent.

We have not specifically qualified graphics or monitors cards against the SonarWiz application, but can attest that it works great on several combinations at CTI headquarters. Please see section 4 below, for examples.

July, 2017 - SonarWiz 7 will be available, and it needs the graphics card and OS to support DirectX11 at a minimum.

1.8.1 Graphics Card Requirements for CTI3DViewer Application

Since release 5.04.0022, a new version of 2D/3D viewer application called CTI3DViewer has been available as a utility, released with the full-installation version of

SonarWiz. Since release 5.06.0035, several bathymetry post-processing utilities are also available, and likewise these really benefit from, and require, a higher-end graphics card capable of 3D presentation. If you need to use the CTI3DViewer application, the new Vessel Editor, or any other bathymetry post-processing graphic utilities, the following special graphics-card requirements will apply to you, above and beyond the requirements necessary to run SonarWiz.

1. In general, CTI3DViewer and bathy graphics editors require a DirectX 9.0c-compatible graphics card supporting Shader Model 2.0. Detailed requirements for CTI3DViewer features support are the following:

- a) Vertex shader version 2.0
- b) Pixel shader version 2.0
- c) Maximum primitive count – 65535.
- d) Maximum number of vertex streams – 16.
- e) Maximum stream stride – 255.
- f) Maximum vertex index – 65534.
- g) Maximum texture size of 2048x2048.

2. If the CTI3DViewer application is launched on a system, which does not meet minimum hardware requirements, a diagnostic message with information about which exact requirement was violated, will be shown (like on the screenshot below), and the application will exit. If your graphics card is supported and you get this diagnostic message, please, try updating your graphics card drivers.

3. Known supported graphics cards:

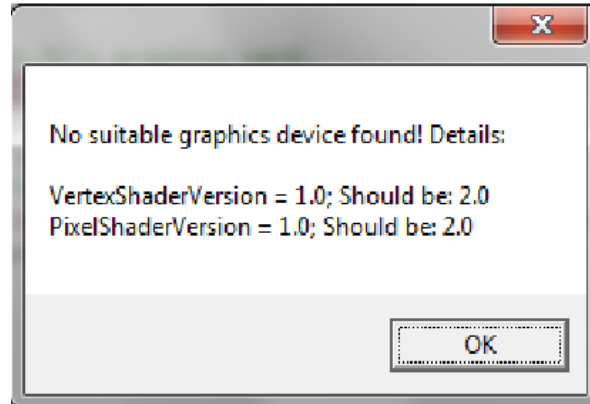
- a) GeForce GT 5200; GeForce 6800 GS and 6800 GT; GeForce 7600, GeForce GT 630 and higher.
- b) Quadro FX 1500;
- c) ATI Radeon 9600; ATI Radeon 9800 series; ATI Radeon X700 XT and higher.
- d) Intel GMA 4500MHD; Intel GMA X3100 (G31/G33/GM45/GS45 chipsets).
- e) AMD Radeon HD 8790M

4. Known unsupported graphics cards:

- a) Intel GMA 900/950 (946GZ/Q965/Q963/940GML/945G/945GU/945GT). In overall, most built-in cards do not support pixel and vertex shaders to full extent, and on-board graphics accelerators are a gamble.
- b) GeForce4 MX 4000; GeForce4 7300 GT.

Note that the same graphics card hardware requirements apply for the Bathy feature-set CTI3DEditor application.

Here's a screen message you may see if your graphics card cannot handle these requirements:



Example 1: Error message for graphics card which doesn't support shader model 2.0

1.9 CTI3DViewer, Bathymetry Editors, DigitizerView - .NET ++ Requirements

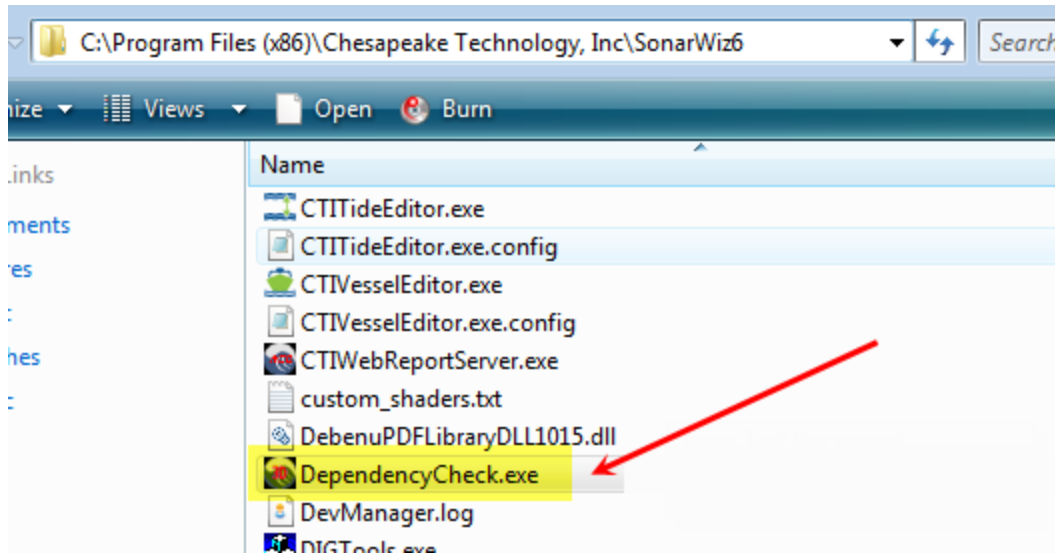
SonarWiz 6.03.0004 and earlier versions: These utilities are optional to run, but to run them, you need .NET 4 and XNA 4.0 installed on your PC. The .NET 4 and XNA 4 installations themselves have dependencies that must be met, in order to install. Each of .NET4.0 and XNA 4.0 are silently installed during SonarWiz “full install” installation, but if they fail to install, it will be a silent error, and you may not realize it until you try to run CTI3DViewer, or a bathymetry editor. If that happens, there are two ways to find out what happened.

SonarWiz 6.04.0001: These newer versions of SonarWiz will use a different internal design, replacing XNA 4.0 with Direct3D11 X, and will have a different DependencyCheck.exe version.

SonarWiz 7: Available July, 2017 - **this newest version of SonarWiz will REQUIRE Direct3D11 X**, and will have a different DependencyCheck.exe version.

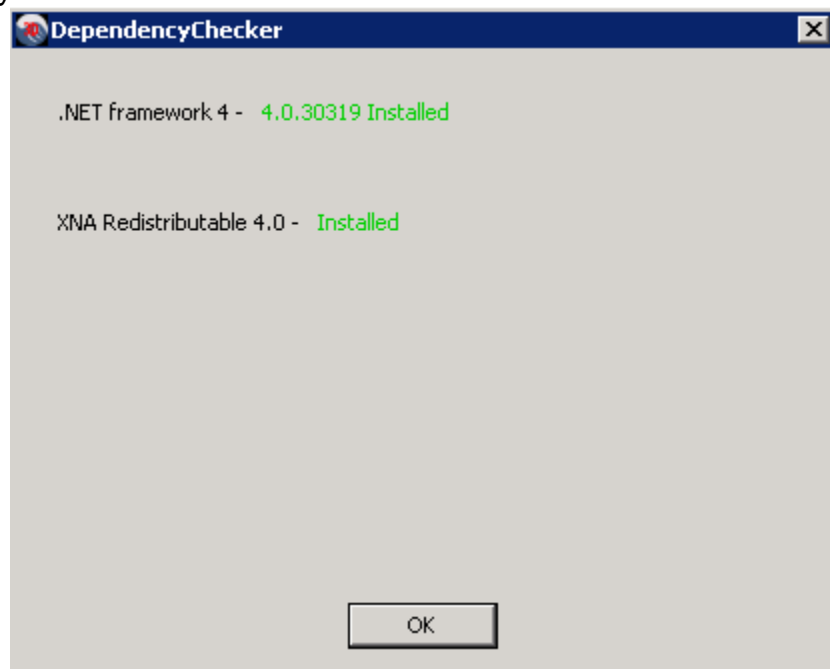
1.9.1 Running DependencyCheck.exe in your Program Files folder

In your SonarWiz program files folder, you will see an executable called DependencyCheck.exe, and if you run it, this is what you want to see – a message saying each whether all the required supporting software is installed properly.



1.9.2 SonarWiz versions 6.03.0004 and Earlier

DependencyCheck.exe run in these versions, reports the installation level of .NET 4.0 and .XNA 4.0 on your PC. SonarWiz had tried to silently install each of these, but it does not always succeed:



Running the .NET 4.0 or XNA 4.0 redistributables on your PC in non-silent mode is the next step, if either had failed to install properly. These may be obtained from Microsoft here:

.NET 4.0 Framework redistributable URL:
<http://www.microsoft.com/en-us/download/details.aspx?id=17718>

XNA 4.0 redistributable URL:

<http://www.microsoft.com/en-us/download/details.aspx?id=20914>

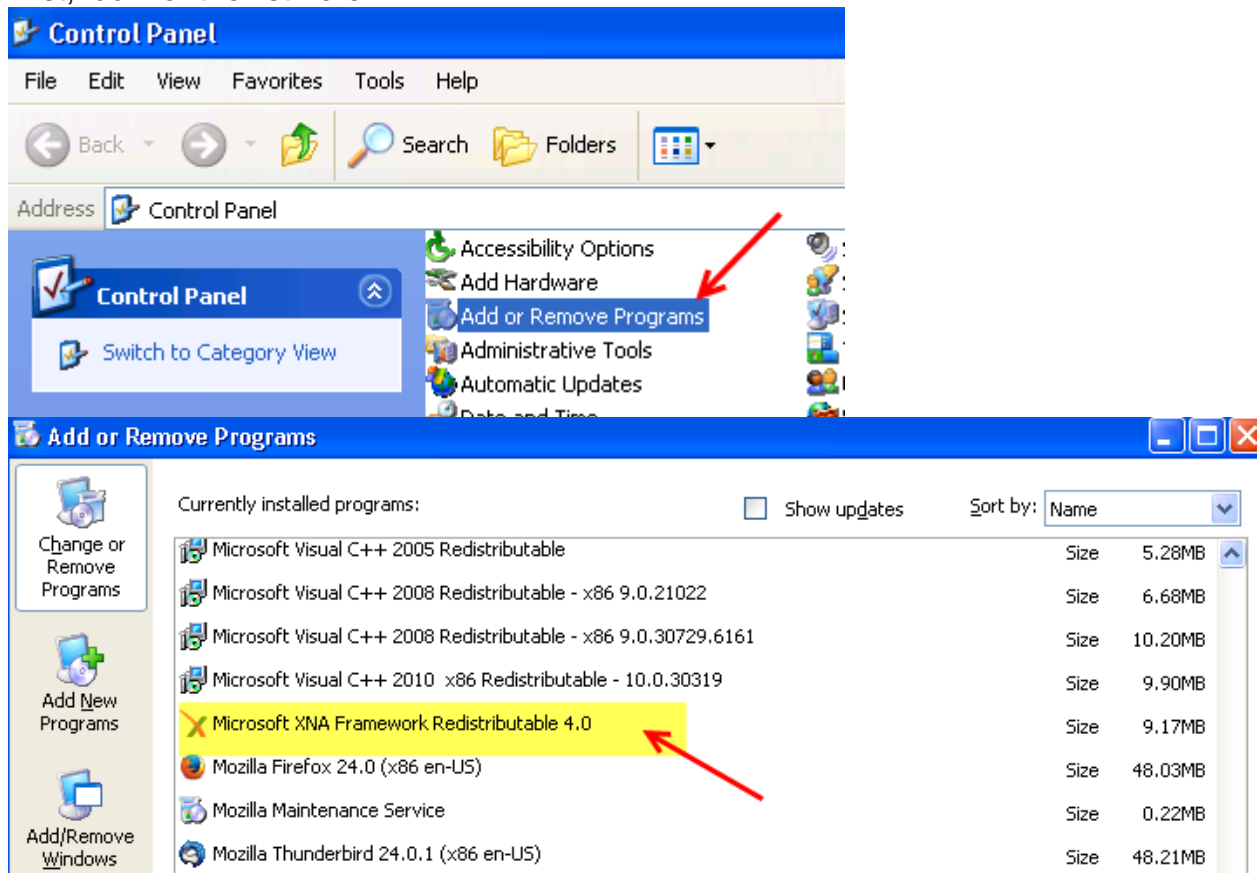
If there are installation errors when you run these manually, you will see what needs to be done to bring your PC up to the level required to get these redistributables installed, and can manage it yourself.

1.9.3 SonarWiz version 7 - requires DirectX11

SonarWiz 7, due in July, 2017, will have its own new version of DependencyCheck, and will verify that SonarWiz 6 requirements are in place, plus **the new SonarWiz 7 requirement - that the OS supports, and has installed, the DirectX11 version, or later.**

1.9.4 Using Control Panel to Verify .NET 4 and XNA 4 Installations

The second way to verify if .NET Framework 4 and XNA 4.0 have installed properly, is to look in the Control Panel -> Settings -> installed programs list, and see if they are present. Here's an example from a WindowsXP system where they are both installed, First, look for the list here:



If you are a VISTA or Windows7 or Windows8 PC, you may be able to find the equivalent list, but it may be a slightly different GUI path to get there.

1.9.5 Dependency Check gap - .NET 4.5.1 in 5.07 Series Software

You may have an error running the Digitizer View, in 5.07-series SonarWiz versions, when the virtual-mode display is selected, even if you have installed .NET 4. This is because these newer features make use of .NET 4.5.1 features, and DependencyCheck.exe may think you're ok, since you have an older version of .NET 4 installed. If this happens, upgrade to .NET 4.5.1 (only available on VISTA, Windows7, Windows8, Windows10), using this redistribution link:

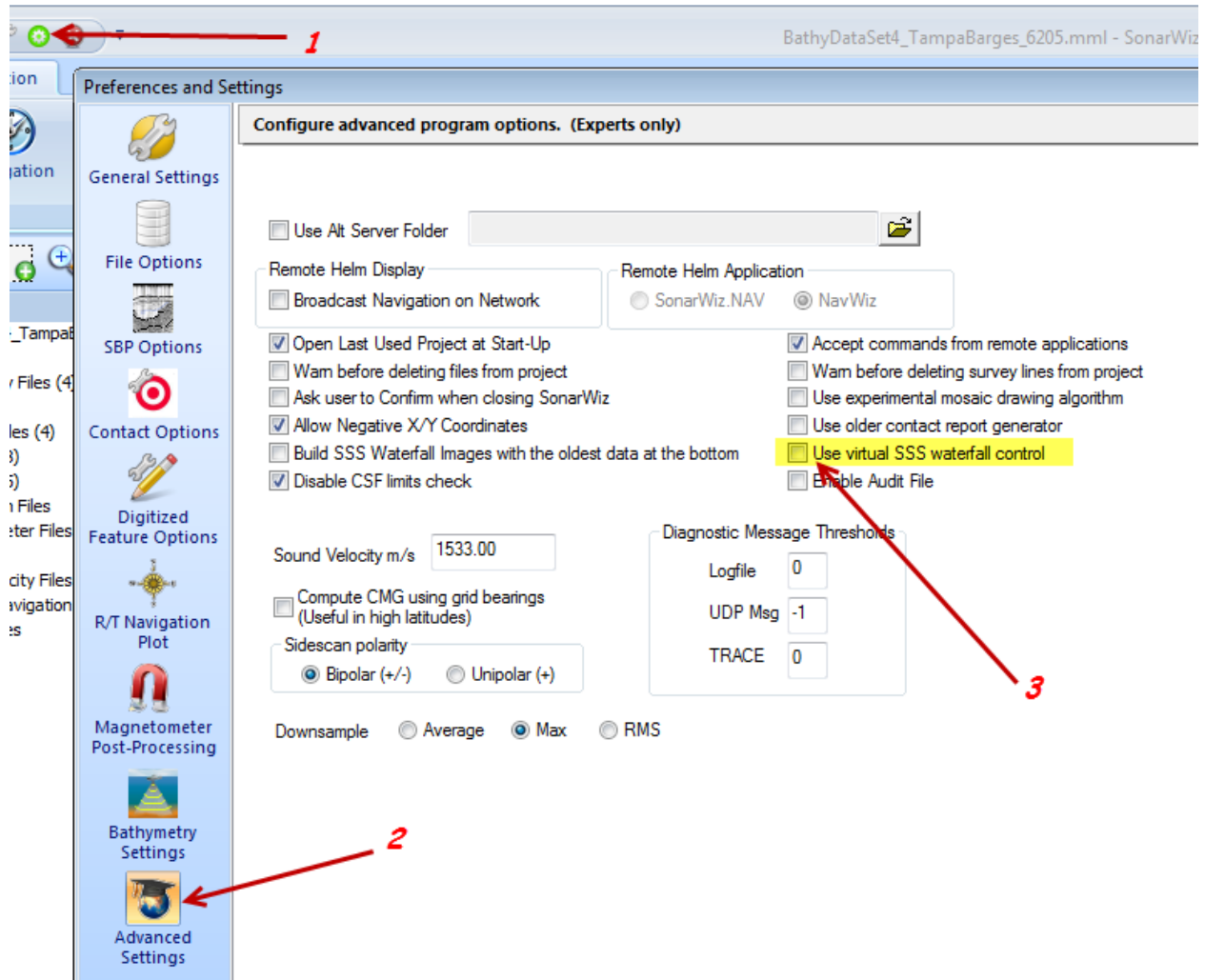
<http://www.microsoft.com/en-us/download/details.aspx?id=40779>

1.9.6 5.07 Series SonarWiz Upgrades - .NET 4.5.1 requirement

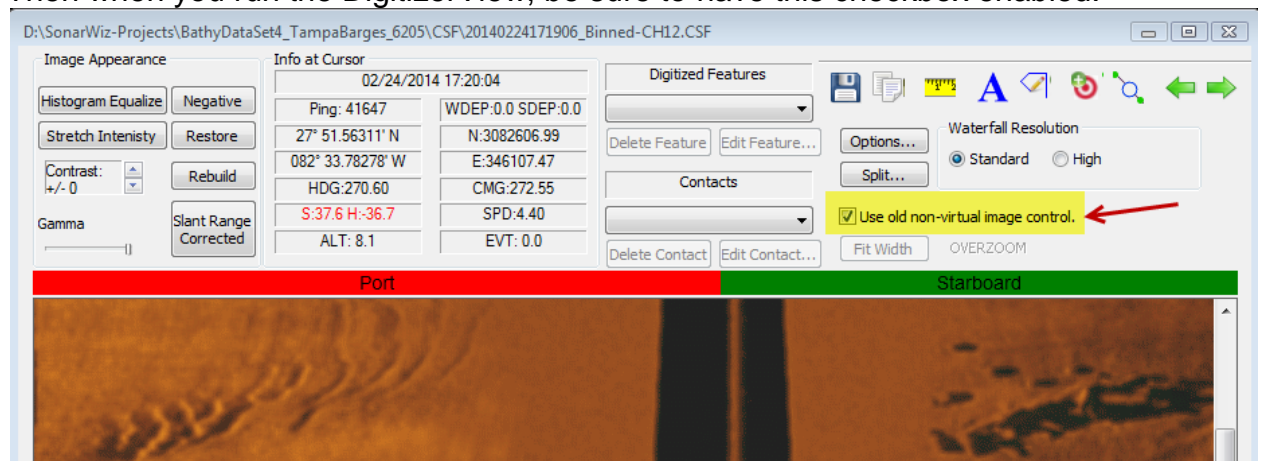
Starting in 5.07.0001, the software began to use .NET 4 features that were part of .NET 4.5.1 distribution. If you were running WindowsXP, which is not able to install .NET 4.5.1, full installation of SonarWiz will not work, and you need to make a special ADVANCED SETTINGS selection to run the software. **We now actively discourage the use of WindowsXP for SonarWiz.**

The setting you need to make in SonarWiz, is to select:

- (1) OPTIONS, then
- (2) Advanced Settings, then
- (3) De-select the "Use virtual SSS waterfall control" checkbox, like this:



Then when you run the DigitizerView, be sure to have this checkbox enabled:

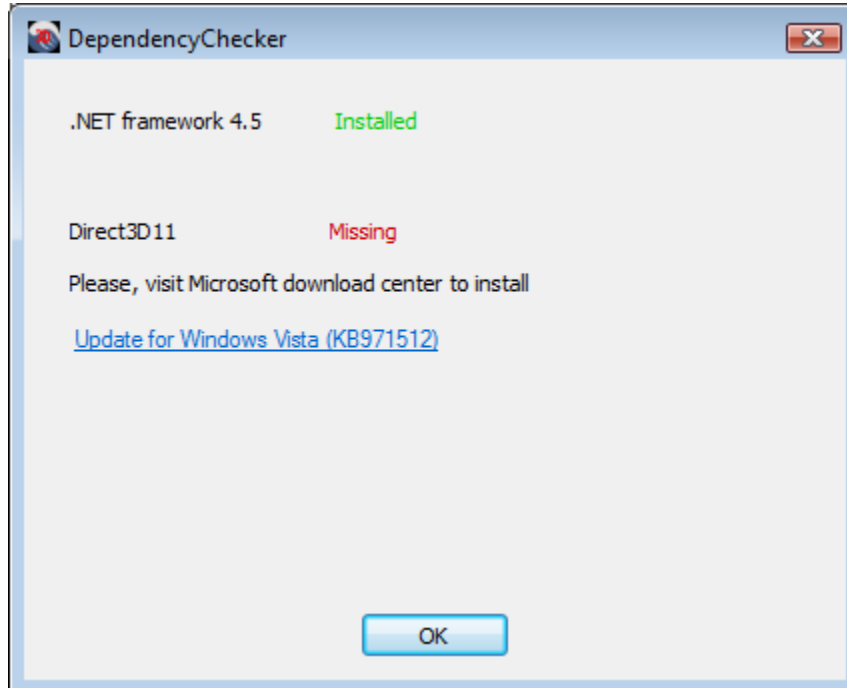


Doing so will force SonarWiz to run the older non-virtual-mode Digitizer View, and it should run fine on older versions of .NET 4.

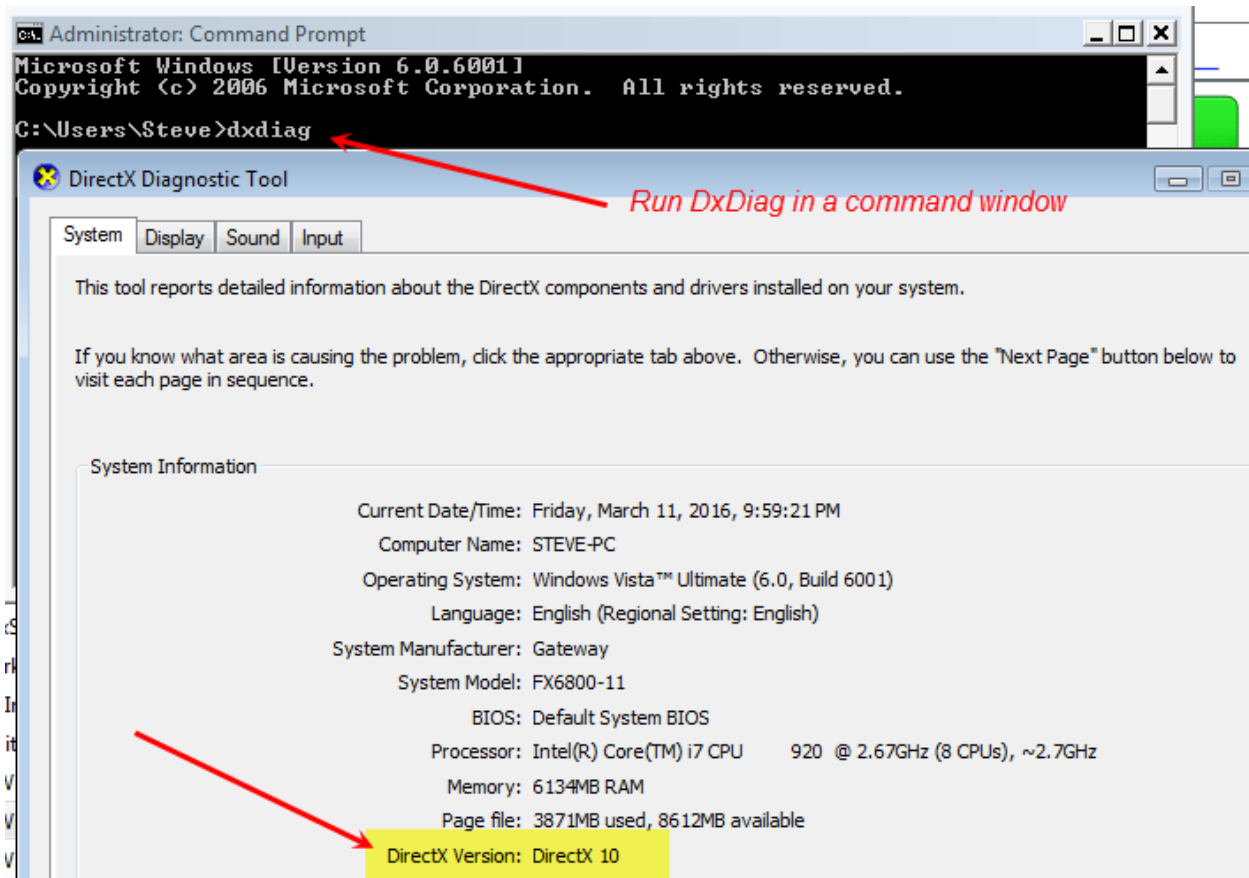
Using the virtual-mode display in SonarWiz is only possible with .NET 4.5.1 installed, in VISTA, Windows7, or Windows8 operating systems.

1.10 SonarWiz 6.04.0001 and later Versions - .NET and Direct3D11 X Needed

DependencyCheck.exe in these versions checks for .NET 4.0 and Direct3D11 installations:

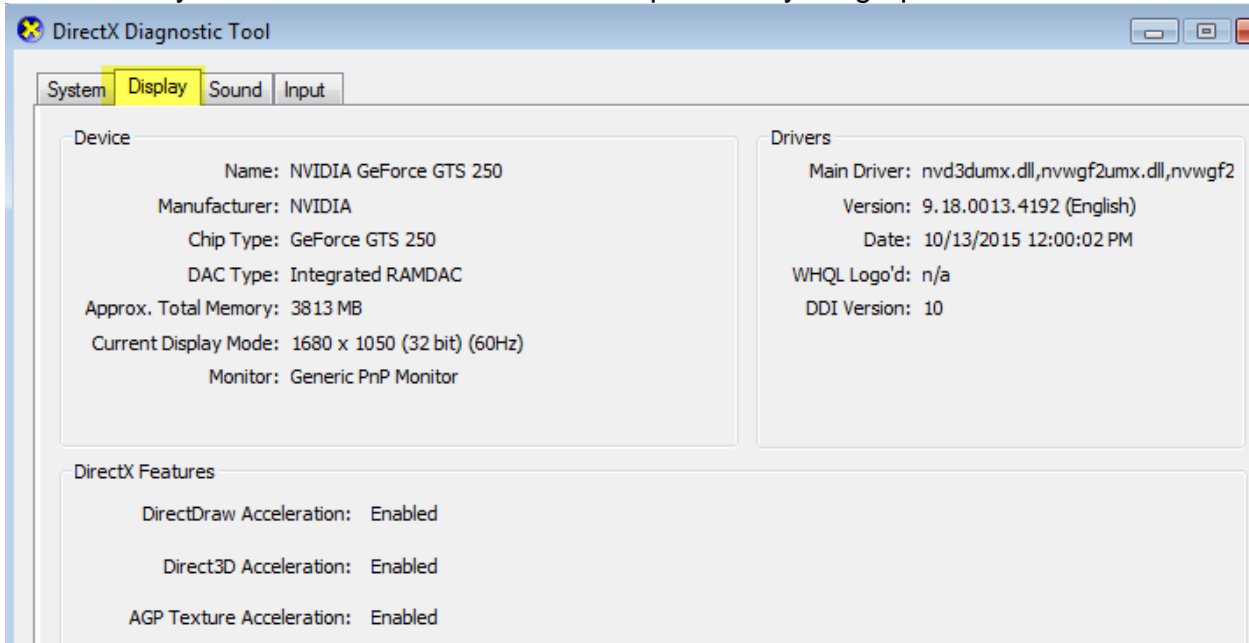


If Direct3D11 is missing, you will need to manually download and install a Microsoft help file for DirectX. Another way to see what version of DirectX is installed on your PC is to open a Command Window (e.g. START -> Accessories -> Command) then enter DxDiag:



This example PC has DirectX10 installed, and needs DirectX11, as shown on the SYSTEM tab of the DxDiag output.

Then select your DISPLAY tab to see what capabilities your graphics card has:



In this case, this is an older graphics card, and the PC only has DirectX 10 on it, so it will not run SonarWiz 6.04 vessel editor and CTI3DViewer, unless we upgrade the DirectX version, and the graphics card.

To get the DirectX 11 downloads:

Windows7 SP1 - Uses download KB2670838:

DirectX 11.1 for Windows 7 SP1 and Windows Server 2008 R2 SP1:

[Platform Update for Windows 7 and Windows Server 2008 \(KB2670838\)](#) ->

<https://www.microsoft.com/en-us/download/details.aspx?id=36805>

2 Post-Processing Vs Real-time Platform Recommendations

2.1 SonarWiz OFFICE PC Recommendations

For office post-processing, processor speed and RAM space will affect performance, but only for ergonomic comfort. In the field, real-time acquisition actually depends upon adequate processor speed and RAM and disk space.

Even a laptop works fine for office post-processing. Several users at the Dec 1-3, 2009 Charleston Training Class held by Chesapeake technology were successfully using Lenovo laptop PCs, for example. Any laptop with an INTEL chipset, excellent graphics and full color support should be adequate.

2.2 Example Minimal PC for R/T Acquisition

Here's a PC configuration that might be considered minimal, and might get overloaded due to slower processor speed, during real-time acquisition:

- 200MHz Intel Pentium 4
- 16 KB primary memory cache
- 1024 KB secondary memory cache
- Hyper-threaded (2 total) RAM 8GB
- Graphics: NVIDIA GeForce 6600 GT
- Ethernet Marvell Yukon 88E8001/8003/8010
- PCI Gigabit Ethernet Controller
- NETGEAR GA311 Gigabit Adapter
- Virus protection OfficeScan Corporate Edition Version 8.0
- Realtime File Scanning On
- Remote login program running called: RealVNC
- Windows Indexing service : may be running

This minimal R/T PC needed some of the optional processes stopped to run real-time acquisition error-free for continuous periods.

2.3 Adequate PC for R/T Acquisition

Here's a PC with more optimal power for the R/T application:

- 3.0 GHz Intel Core 2 Duo CPU
- E8400 @ 2.0 GHz, 8 GB of RAM

2.4 Recommended (optimal) PC for R/T Acquisition – e.g. Shuttle

Here's a PC CTI actually sells for real-time data acquisition, equipped optimally. You can see these recommended optimal specs in the link here:

<http://www.chesapeaketech.com/products/SonarWIZ-Shuttle.php>

2.4.1 Shuttle Product Specifications

The SonarWiz Shuttle system (see image below for available ports and connectors), includes the following minimum specifications, as of February, 2012:

- All aluminum case for durability at sea
- Intel i7 CPU
- Dual monitor VGA controller
- 8GB RAM (or more!)
- 1TB hard drive
- DVD+R (you load first-time software via CD typically, though updates thereafter can easily be done via Internet download)
- 10/100/1000 Mb/s Ethernet
- 6 USB Ports
- Windows 7 64-bit
- Keyboard and Mouse
- 2 serial ports

The SonarWiz Shuttle System, measuring only 7.5"W x 10.6"D x 6.3"H (19cm x 27cm x 16cm), fits easily in a small backpack. In fact, we did just that during our first sea-trial of the SonarWiz Shuttle. The system, stowed in a backpack, was brought onboard our Alaska Airlines flight as carry-on luggage (although we can't guarantee it will get through security today).

While the form factor is much less important than the internals, this PC performs well, is compact and reliable, and you should seek to find an equivalent in any PC you purchase for long-term use in real-time data acquisition with SonarWiz.

2.5 Disk and File Size Recommendations

Finally, consider a large, fast disk drive space for acquiring large amounts of data. Our recommended file-size max is 32k pings or less per sonar file, so it can import quickly for post-processing, though larger files can be used, but take more time to import. You can collect as much as your disk holds, though. 120GB disk size, or larger, is a good idea.

2.6 SonarWiz Real-time : Competing Applications

We sometimes find that anti-virus software competes for Ethernet-connection control with SonarWiz, either preventing the connections from being created, or preventing them from being maintained. You should turn off any **anti-virus** applications before trying to run SonarWiz to control and maintain a connection to a real-time server to record data. Sometimes turning off Windows **FIREWALL** is necessary too, to allow a connection between the SonarWiz PC and server, and the external PC top-side unit supplying sonar data packets.

3 Supported Operating Systems – As of August, 2016

The following OS versions are not supported or recommended by CTI:

Windows XP	32-bit, SP2 and higher
Windows XP	64-bit
VISTA	32-bit
VISTA	64-bit

We have had customers and developers successfully running the SonarWiz application on versions of the following OS versions, and we support them:

Windows7	32-bit
Windows7	64-bit
Windows8	32-bit
Windows8	64-bit
Windows10	32-bit
Windows10	64-bit

4 Training Videos - Supported Operating Systems and Viewers

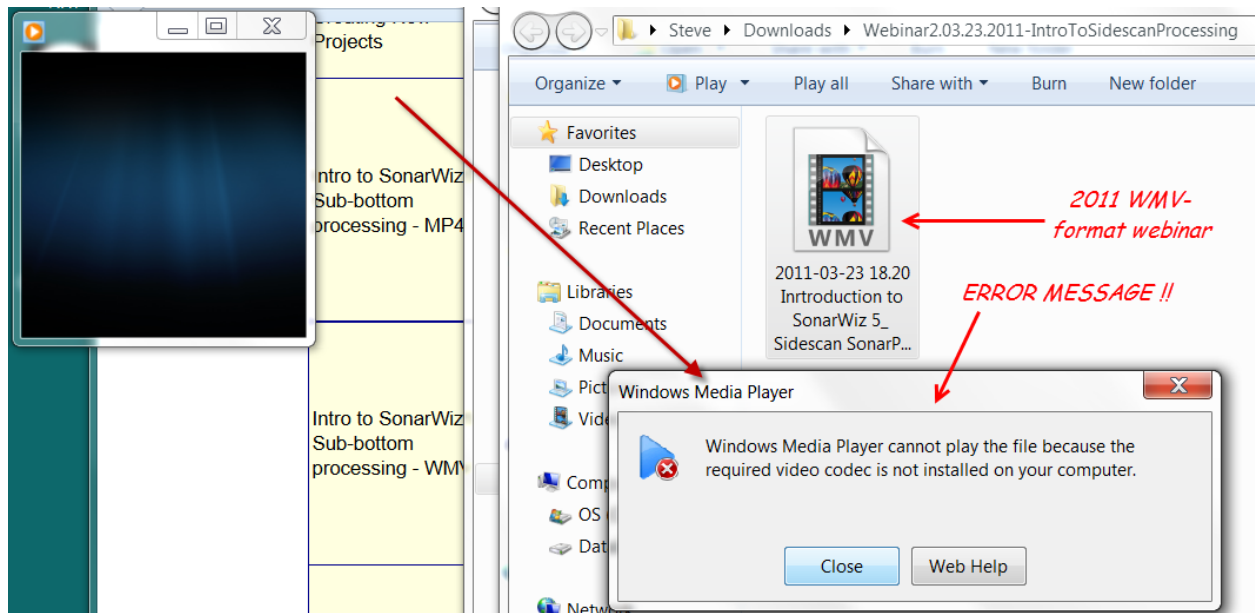
We have 3 types of training-video format in the TUTORIALS area of www.chestech-support.com here:

- (1) Older WMV format - plays well on Windows Media Player (free download)
- (2) Newer MP4 format - plays well on Apple QUICKTIME player (free download)
- (3) MP4/HTML hybrid format - some videos are created in a joint-release format so that you have the option of viewing it in QUICKTIME or an Internet browser, such as Mozilla Firefox. These are not extensively tested for browser compatibility.

We expect the same PC platforms that run SonarWiz, to be used to view the webinars and training videos. These PCs and OSes all support Windows Media Player, and QuickTime, and Internet browsers.

4.1 Missing CODEC Issue - Windows Media Player

We've had one major issue with various PC operating systems having a wide range of versions of Windows Media Player installed. You may get a missing CODEC error message like this when you try to view your webinar:

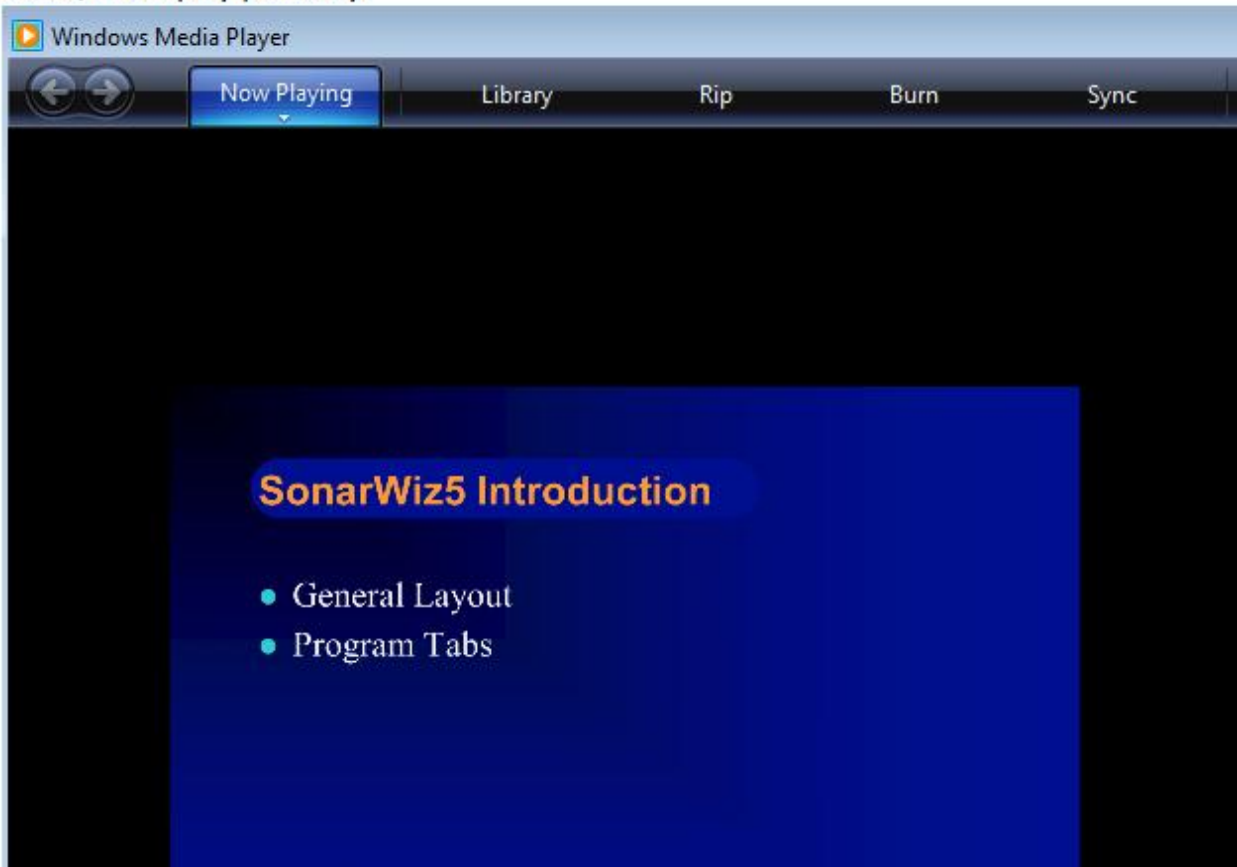


If that happens to you, we recommend that you try this CODEC from the GoToMeeting.com folks:

Get G2M3 codec:

Go to this URL <https://www2.gotomeeting.com/codec> and click the button "Install GoToMeeting Codec". Once you complete the installation process, restart your computer - or at least restart Windows Media Player before trying to play the video. We have a 2009 Windows VISTA 654-bit OS PC in tech support at CTI, and the webinar plays fine on that - no missing CODEC. On a newer July, 2014 purchased Dell E6540 Latitude laptop running Windows7 64-bit, we got the missing CODEC error - go figure! So we installed the GoToMeeting G2M3 CODEC, and viola - the webinar played:

audio/video play perfectly:



So good luck with that - but we have had very good success with the training webinars and videos on Windows Media Player, QuickTime, and web browsers so far. Hopefully you can obtain one of these 3 players as is appropriate for the specific training webinar/video that you are playing, and can get it going.

5 Sample PC Configurations & Graphics cards in use at CTI

The following 6 PC configurations are in use at CTI headquarters for SonarWiz testing and development, and run SonarWiz adequately. In terms of CPU speed, and screen resolution, 4 feel great for post-processing, and #5 seems slower on graphics refresh and operations speed.

When comparing your own graphics card or chipset choice, to those shown below, visit the manufacturer's web-site (e.g. www.nvidia.com), and compare the specs on your card with those of the older cards used below (all in-house systems are 2+ years old).

5.1 Sample LAPTOP1 - Lenovo ThinkPad W510

Intel Core i7 Q720 chipset

1.6Ghz CPU, 8GB RAM

Windows 7 64-bit

NVIDIA Quatro FX880M, set to 1600 x 900 resolution, 32-bit color, 20" (diag)

5.2 Sample LAPTOP2 - Lenovo model 444625U (circa 2010)

Intel Core Duo T6400 chipset Q720 chipset

2.0Ghz CPU, **2.96GB RAM (does not meet minimum specs now)**

Windows XP 32-bit, SP3

Mobile Intel Series 4 Express chipset, set to 1280 x 800 resolution, 32-bit color, 15" (diag)

WindowsXP is no longer a recommended or supported OS for SonarWiz.

5.3 Sample SHUTTLE1

Intel CoreDuo E8400 chipset

3.0GHz CPU, 3.5GB RAM

Windows XP, 32-bit, SP3

NVIDIA GeForce 8500, set to 1680 x 1050 resolution, 32-bit color, 22" monitor (diag)

(NOTE: SHUTTLE computers do not come with a MONITOR. You must choose and buy your own)

5.4 Sample TOWER

Intel Core i3 CPU chipset

2.93Ghz CPU, **2GB RAM (does not meet minimum specs now)**

Windows 7 32-bit

NVIDIA Quattro FX880M, set to 1600x 900 resolution, 32-bit color, 20" (diag)

You definitely get a "slow app" experience trying to run SonarWiz on this PC, which could run early versions of SonarWiz 5, but now does not have enough RAM to run SonarWiz 6 reliably.

5.5 Sample SHUTTLE2 (slower graphics and ops speed)

This is a rudimentary test bed and operations appear to take considerably more time to occur, and screen-refresh is slower. This PC also cannot run the 3D graphics necessary for vessel editor of CTI3DViewer in version 6.03.0003, for example.

WindowsXP is no longer a recommended or supported OS for SonarWiz.

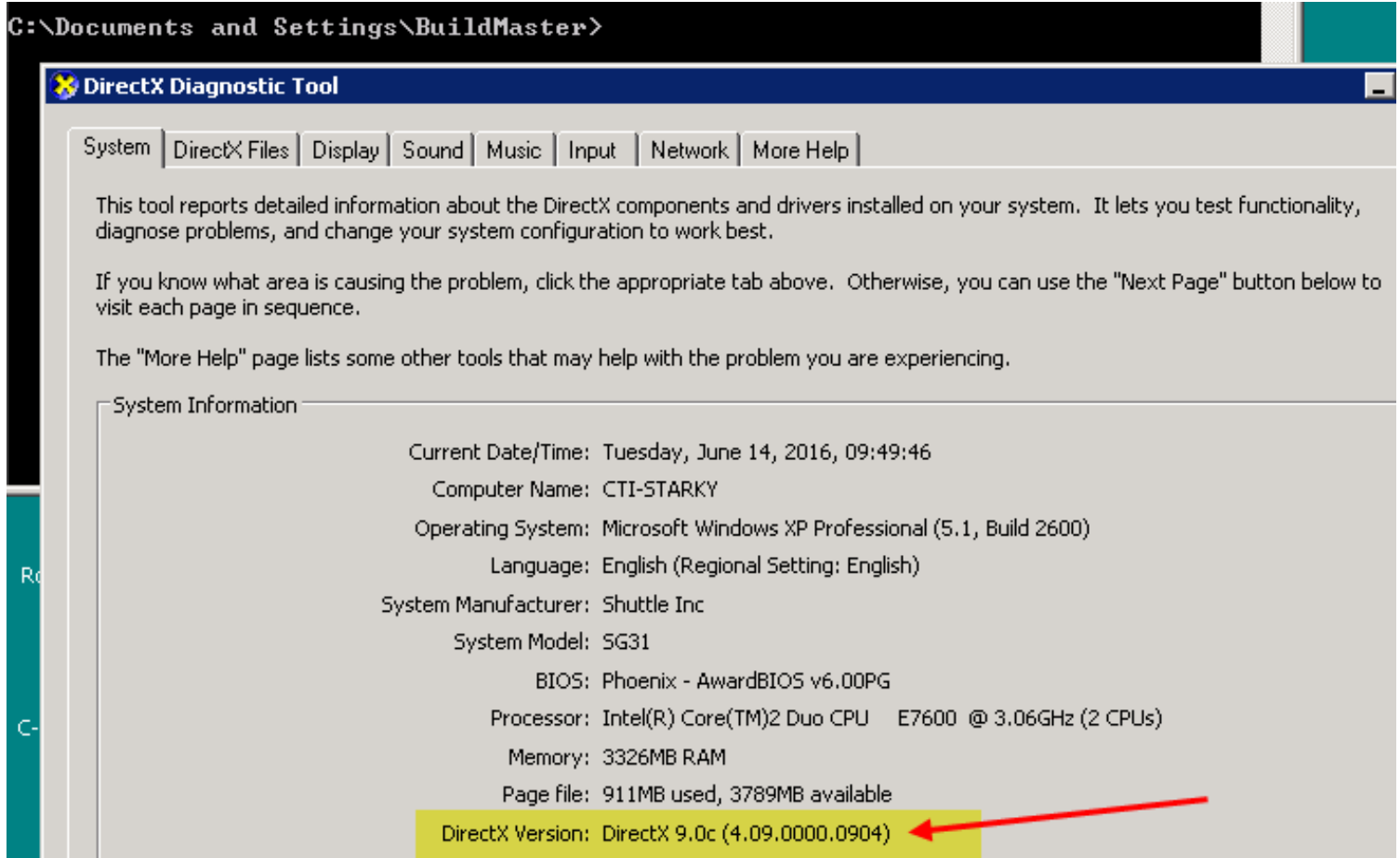
Intel Core Duo E7600 CPU

3.06 GHz, 3.25 GB RAM

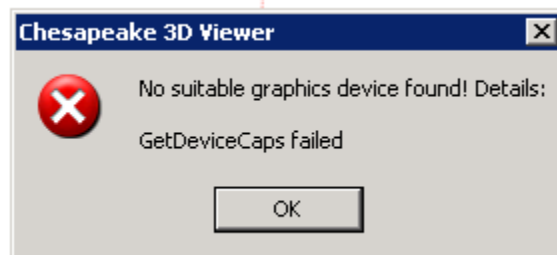
Windows XP, 32-bit, SP3

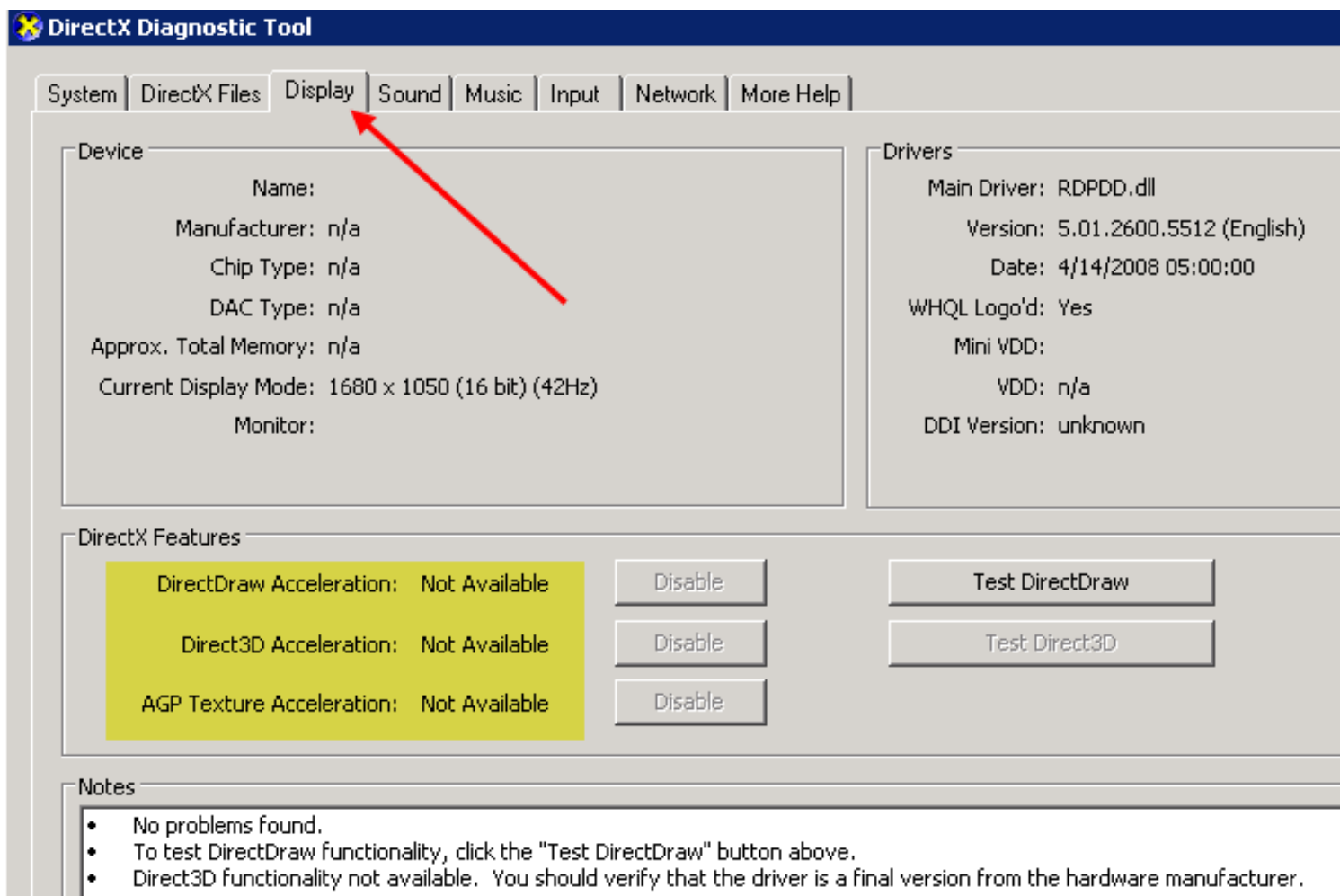
DirectX 9.0.3 supported

NVIDIA GeForce 9600GT, set to 1280 x 1024 resolution, 32-bit color, 19" (diag)



Running CTI3DViewer, we get this error message:





5.6 Sample MINIMAL Laptop - 2010 (MUCH slower graphics and ops speed)

This is an older laptop and operations appear to take considerably more time to occur, and screen-refresh is slower. It can run early 2010-2012 versions of SonarWiz 5, but not SonarWiz 6 (not enough RAM).

Model: Toshiba M55-S3262

Intel PENTIUM M, Centrino CPU, 1.87 GHz

3.06 GHz, **512 MB RAM (does not meet minimum specs now)**

Windows 7 ultimate, 2009 version, 32-bit, SP1

On-board graphics chipset, Mobile Intel 915GM/GMS, 910GML Express Chipset, set to 1280 x 768 resolution, 128MG graphics RAM, color resolution default - unknown, 14" (diag)

This laptop can create or open a small 6-line XTF project, displays it very slowly, and would not support larger projects at all.

5.7 Sample SHUTTLE3 (faster graphics refresh and ops speed)

This is a newer (February, 2014) test bed and operations appear to run SonarWiz very well, in all respects, including vessel editor and CTI3DViewer in 6.04 series.

Intel Core i7-4771 CPU @ 3.50 GHz

8 GB RAM

Windows 7, 64-bit, SP1

NVIDIA GeForce GT 630, set to 1680 x 1050 resolution, 32-bit color, 19" (diag)

DirectX11 OS and chipset supported

5.8 Sample DELL E6540 Latitude Laptop (faster graphics and ops speed)

This is a newer (July, 2014) test bed and operations appear to run SonarWiz very well, in all respects, including vessel editor and CTI3DViewer in 6.04 series.

Intel Core i7-4800 MQ CPU @ 2.70 GHz

8 GB RAM

500GB SSD

Windows 7, 64-bit

AMD Radeon HD 8790M, set to 1920 x 1080 resolution, 32-bit color, 16" (diag)

DirectX11 OS and chipset supported

The only disadvantage of a laptop, such as in a case like this, is screen size.

5.9 Sample TABLET - Microsoft Surface Pro 3

We have one recent (2016) example TABLET from a developer using SonarWiz 6 on it, and nothing seemed unsupported. Vessel editor and CTI3DViewer ran ok, as well as all other SonarWiz functions.

Intel Atom x7 CPU @ 1.60 GHz

8 GB RAM

Windows 10, 64-bit

DirectX11 OS and chipset supported

On-board graphics supports 3D, 10.8" screen size specification

The only disadvantage of a tablet, such as in a case like this, is screen size.

5.10 Sample Tower - older FX6800 (2009) - LEGACY PC EXAMPLE

Here's an example of a PC where you may be able to run SOME SonarWiz functions well, including the vessel editor and CTI3DViewer, but only up to and including the 6.03 series versions of SonarWiz. This version of the OS, and the graphics card, do not support DirectX11, so they can only run vessel editor and CTI3DViewer where NET4 and XNA4 were used to support the 3D graphics (e.g. 6.03 and earlier versions of SonarWiz). **VISTA is no longer a recommended or supported OS for SonarWiz.**

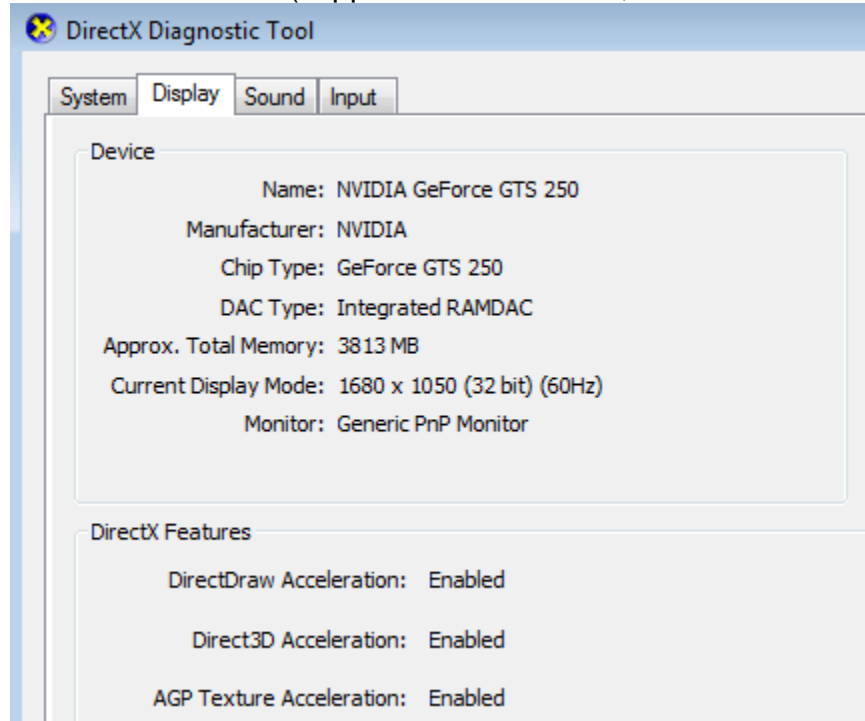
Intel Core i7 CPU @ 2.67 GHz

6 GB RAM

VISTA, 64-bit ultimate

DirectX 10 OS support

Graphics card: NVIDIA GTS 250 (supports DirectX10 3D, but not DirectX11)



You can research the graphics card capabilities for any potential PC or laptop you want to buy, and visit the graphics manufacturer web-site like www.nvidia.com in this case, and see if it supports DirectX11.

We have purchased a newer NVIDIA GEFORCE GT740 graphics card for this PC and will upgrade it to Windows10 and default DirectX11 support. These are options on your own PC, if your current OS can support DirectX11. DirectX11 is a default support level in Windows8 and Windows10, and can be added to Windows7 or VISTA if it is missing from the initial configuration.

5.11 Sample DELL E7450 Latitude Laptop (faster graphics and ops speed)

This is a newer (May, 2016) test bed and operations appear to run SonarWiz very well, in all respects, including vessel editor and CTI3DViewer in 6.04 series.

Intel Core i7-5600U 4 CPUs @ 2.60 GHz

8 GB RAM

500GB SSD

Windows 10, 64-bit, SP1

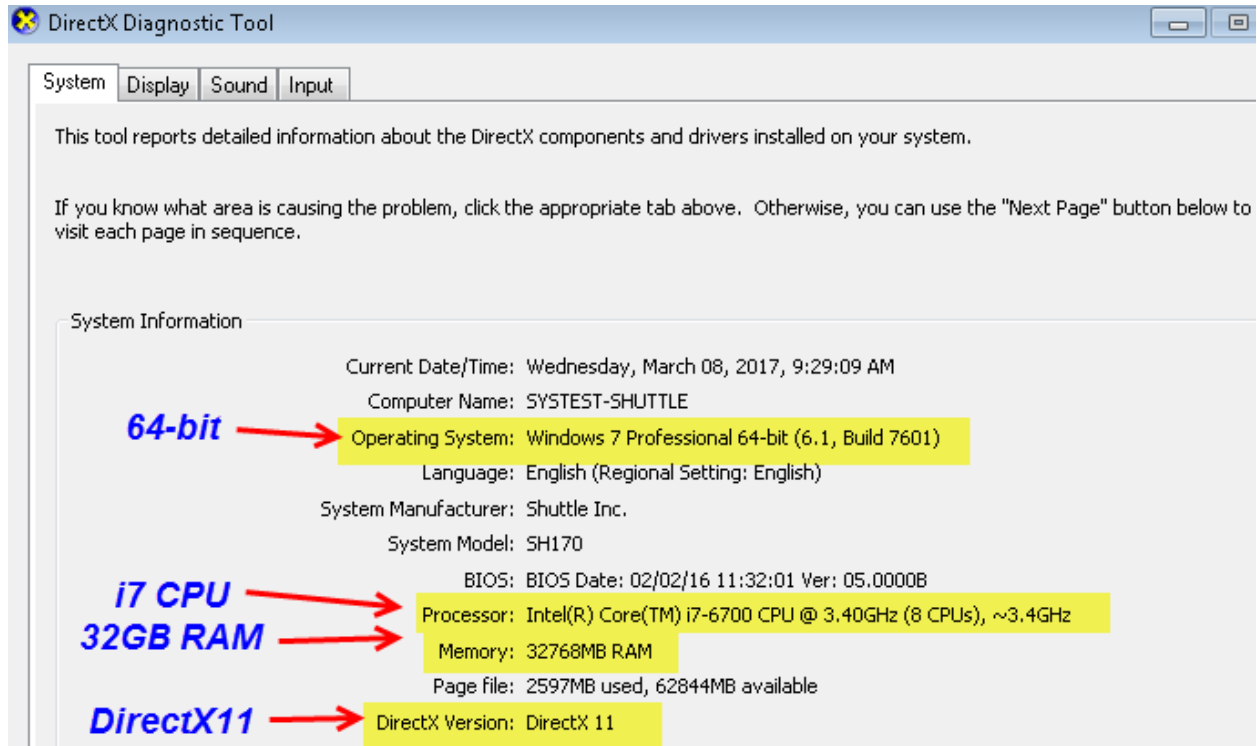
Intel 5500 Graphics, HD 4196RAM, set to 1366 x 768 resolution, 32-bit color, 14" (diag)

DirectX12 OS and chipset supported

The only disadvantage of a laptop, such as in a case like this, is screen size.

5.12 Sample SHUTTLE desktop computer (fast graphics and ops speed)

This is a new (March, 2017) test bed and operations appear to run SonarWiz very well, in all respects, including vessel editor and CTI3DViewer in 6.04 series.



The graphics card is an NVIDIA GT 730 4GB DDR3 128-bit:

EVGA GeForce GT 730 4GB
P/N: 04G-P3-2739-KR



EVGA **EVGA GeForce GT 730 4GB**

Part Number: **04G-P3-2739-KR**

Speed up your PC experience when you upgrade from integrated graphics to the new NVIDIA GeForce GT 730 dedicated card. Enjoy all your videos and pictures at HD resolutions, with faster video editing, faster photo editing, and faster web browsing compared to integrated graphics. Discover faster gaming performance than integrated graphics, making all your gameplay richer and smoother. You can even get the latest drivers and optimize game settings with a single click using GeForce Experience. The GeForce GT 730 is everything you need for a better, faster PC experience.

Learn more [here](#)

SPECIFICATIONS

- Base Clock: 700 MHz
- Memory Clock: 1400 MHz Effective
- CUDA Cores: 96
- Bus Type: PCI-E 2.0
- Memory Detail: 4096MB DDR3
- Memory Bit Width: 128 Bit
- Memory Speed: 1.43ns
- Memory Bandwidth: 22.4 GB/s

DIMENSIONS

- Height: 4.376in - 111.15mm
- Length: 6.6in - 167.75mm



See:

<http://www.evga.com/products/Specs/GPU.aspx?pn=d2cf81c9-ea90-489e-adb3-63e5093de04b>

KEY FEATURES

- NVIDIA PhysX technology
- PCI Express 2.0 support
- NVIDIA Adaptive Vertical Sync
- Microsoft DirectX 12 API (feature level 11_0) Support
- NVIDIA 3D Vision Ready***
- NVIDIA CUDA Technology with OpenCL support
- OpenGL 4.4 Support
- OpenCL Support
- NVIDIA FXAA Technology
- NVIDIA TXAA Technology
- NVIDIA PureVideo HD Technology

RESOLUTION & REFRESH

- 240Hz Max Refresh Rate
- Max Analog: 2048x1536
- Max Digital: 2560x1600

REQUIREMENTS

- 300 Watt or greater power supply with a minimum of 20 Amp on the +12 volt rail.****
- PCI Express, PCI Express 2.0 or PCI Express 3.0 compliant motherboard with one graphics slot.
- Windows 10 32/64bit, Windows 8 32/64bit, Windows 7 32/64bit, Windows Vista 32/64bit, Windows XP 32/64bit

6 Enhanced CPU and Graphics Capability - Can SonarWiz use it?

This is a common question and the developers recently answered it. We don't have systematic benchmark test results, but the developers who know the SonarWiz design expect 4 main factors to play into the ergonomics of your SonarWiz experience.

6.1 CPU Speed and Core Count

We don't specifically try to optimize SonarWiz to run using all available cores, but your OS may help in that regard. The newer, the better.

Developers say: " SonarWiz can make use of multiple cores in several areas of the program and the 64-bit version definitely takes advantage of the additional RAM in both the CPU and GPU. As we continue to evolve we are designing towards more use of the GPU where possible"

6.2 Graphics Card Capability

Beyond DirectX11 and 3D support, the next best thing for your graphics card upgrade is to get more RAM.

6.3 Disk Speed Issues

SonarWiz is disk-use intensive. We create and access files quite a bit from the disk drive. We have sections in the www.chestech-support.com SonarWiz 5 FAQs, and in the SonarWiz User Guide, specifically advocating for a local hard-drive for project use. Network drives tend to be slower. Comparing a local standard hard drive, versus a local SSD (solid state drive), you can consider the specific disk drive specs of what you own or want to buy, to see which may be faster for your PC - what you have, or what you plan to buy. Faster is better!

6.4 Advantage - 64-bit!

The most likely source of project-speed advantage you may enjoy, since January, 2016, is the ability to use full 64-bit architecture in SonarWiz 6.04 and later versions. We go into some detail in a separate PDF explaining this option, here:

http://www.chestech-support.com/download/ctisupport/Sonarwiz_6/UserDocs/CTI_TN-2016-01-21_64-bit_SonarWiz.pdf

In short, the 64-bit SonarWiz 6 download option provides the ability to install SonarWiz 64-bit, along with parallel installations of SonarWiz 6 32-bit, and SonarWiz 5, on the same PC. The 64-bit version requires, but makes full use of, a 64-bit hardware chipset, and OS. It then allows you to directly access more than 4GB RAM (if you have it on the PC). So for larger projects, more RAM and the 64-bit version will give you a distinct advantage. These 3 versions of SonarWiz install to these 3 different folder, by default:

SonarWiz 5.08.0012, the final release of SonarWiz5, would by default install here:

C:\Program Files (x86)\Chesapeake Technology, Inc\SonarWiz5

SonarWiz 6 32-bit (x86) version by default installs here:

C:\Program Files (x86)\Chesapeake Technology, Inc\SonarWiz6

In yet a third and different installation folder, SonarWiz 6 64-bit version by default installs here:

C:\Program Files\Chesapeake Technology, Inc\SonarWiz6

7 Ruggedized PCs - Generally Acknowledged Reliable Products

We sometimes are asked, among the PCs / laptop which can run SonarWiz well, are any ruggedized for extreme environments? This section deals with that topic. A few of the areas of ruggedization to consider, in layman's terms, are:

- (1) waterproofedness - if you are in an area where rain / splashing can occur, you need to be able to survive it - whether it is a few rain sprinkles (which can be enough to destroy many cell phones and laptops), or a deluge. You may want a PC with a "water resistant / proof" rating;
- (2) choosing an optimally sized SSD (solid-state drive), instead of the legacy hard disk drives with rotating disks and read/write heads perilously close to the magnetic film. Many of us have experienced the grief of hard-disk loss on a PC or laptop due to incidental mechanical shock. Many vendors provide 512GB SSD now, and a few are offering 1TB or larger - the larger the better;
- (3) deciding which case / screen / electronics will withstand the vibration / dropping / bumping expected - nobody wants a cracked case or loose parts flopping around inside, and some are more robust than others;
- (4) keyboard - can it take the type of use you intend - pounding keys, spilling coffee, dropping the coffee cup on it ... some are fragile, others more robust. It pays to read up on the reviews for your model.

PC manufacturers formalize this and describe their PC models' compliance with MIL-SPEC ruggedness ratings.

As these are general concerns for anyone using a PC in a challenging environment, ratings are available, and we discuss them here. In 2016-2017, these two brands and models receives "best of class" reviews:

1. LENOVO Thinkpad T450s (for travel and business use)
2. DELL Latitude 14 Extreme (for outdoor / extreme environments)

They are both profiled in detail here

<https://reactual.com/portable-electronics/toughest-laptop.html>

The DELL model seemed more ruggedized so we profile that here in a little more depth.

7.1 DELL Latitude 14 Extreme - robust for outdoor & industrial use

This is a category, not a specific model, of DELL laptop and has customization options. For use with SonarWiz, you would want an i7 or faster CPU, Windows7 or Windows10, 512GB SSD and 8GB or more of RAM, and a 3D-capable graphics card. The example PC profiled below looks like it meets all these specifications goals:

Example options supporting SonarWiz:

<https://www.cnet.com/products/dell-latitude-14-rugged-extreme-7404-14-core-i7-4650u-16-gb-ram-512-gb-ssd-4625852/>

Features:

- i7 CPU
- 8GB - 16GB RAM options
- 512GB SSD
- Windows7 64-bit pre-installed

NVIDIA GeForce GT 720M - 2 GB

You really want a card capable of 3D graphics to see and use the SonarWiz vessel editor, 3DViewer, and bathymetry editors. The example tech Support shuttle with the GT 630 has excellent 3D capability, so the GT 720M may do fine as well.

The GeFORCE web-site description and specifications make this card look as capable as the GT 630:

<http://www.geforce.com/hardware/notebook-gpus/geforce-gt-720m/specifications>



If you have the option to customize the purchase by specifying a graphics card like the GT 730 or GT 740, if you go with this vendor and model, that would be a good way to go. We have one example PC listed above using the GT 730 and it can run all the SonarWiz display options well, we just have not specifically shown an example with the GT 720M yet.