GaGe

GAGE APPLIED TECHNOLOGIES

CompuGen ISA Hardware Manual and Driver Installation Guide

First Edition (June 2005)

Please complete the following section and keep it handy when calling Gage for **technical support**:

Owned by: _____
Serial Number(s): _____
_____
Purchase Date: _____
Purchased From: _____

You must also have the following information when you call:

· Software Driver & Application Version
· Software Development Kit, if applicable
· Brand name and type of computer
· Processor and bus speed
· Total memory size
· Information on all other hardware in the computer

How to reach Gage Applied Technologies for Product Support
Toll-free phone: (800) 567-GAGE   Toll-free fax: (800) 780-8411

To reach Gage from outside North America
Tel: +1-514-633-7447   Fax: +1-514-633-0770

Email: prodinfo@gage-applied.com   **Website**: www.gage-applied.com

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Preface

This manual provides detailed information on the hardware features of CompuGen Analog Output cards. This information includes specifications, block diagrams, connector descriptions, memory architecture descriptions, etc.

In addition, this guide takes you through the process of installing your CompuGen card(s) and describes available custom features.

It is assumed that the reader is familiar with using PCs, Windows and ISA bus cards. No description is included for these topics. If you are not comfortable with these areas, it is strongly recommended that you refer to the relevant product guides.

To maintain the accuracy of the information contained herein, we reserve the right to make changes to this manual from time to time.

Note: For brevity, in this manual,

 "CompuGen 1100" is abbreviated as "CG1100"

"CompuGen 3250" is abbreviated as "CG3250"

Preventing ESD

Before installing or servicing this product, read the ESD information below:

CAUTION. *Static discharge can damage any semiconductor component in this instrument.*

When handling this instrument in any way that requires access to the on-board circuitry, adhere to the following precautions to avoid damaging the circuit components due to electrostatic discharge (ESD).

1. Minimize handling of static-sensitive circuit boards and components.

2. Transport and store static sensitive modules in their static protected containers or on a metal rail. Label any package that contains static sensitive boards.

3. Discharge the static voltage from your body by wearing a grounded antistatic wrist strap while handling these modules and circuit boards. Do installation and service of static-sensitive modules only at a static-free work station.

4. Nothing capable of generating or holding a static charge should be allowed on the work station surface.

5. Handle circuit boards by the edges when possible.

6. Do not slide the circuit boards over any surface.

7. Avoid handling circuit boards in areas that have a floor or work-surface covering capable of generating a static charge.

General safety summary

Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it. To avoid potential hazards, use this product only as specified.

Observe all terminal ratings.
To avoid fire or shock hazard, observe all ratings and markings on the product. Consult the product manual for further ratings information before making connections to the product.

Do not apply a potential to any terminal, including the common terminal, that exceeds the maximum rating of that terminal.

Do not operate with suspected failures.
If you suspect there is damage to this product, have it inspected by qualified service personnel.

Do not operate in wet/damp conditions.

Do not operate in an explosive atmosphere.

Driver installation guide

Installing your Gage CompuGen hardware in a computer is only one step in setting up your system. You also need to install drivers and application software to operate the instrument card or cards you purchased. This section will describe how to install software and verify the operation of your new hardware.

Please note that due to the various versions of operating systems supported by Gage, the screen captures serving as illustrations in this manual may differ from what you will see on your screen. The discrepancies will not be material when it comes to basic functionalities and operation; however, the look and certain names will be slightly different.

Installing drivers and applications

The product that you have purchased comes with a totally re-designed and vastly improved installation package. This new installer was designed to work the same way on all supported operating systems. It was also designed to be intuitive to most users and easy to follow for anyone familiar with installing software on a computer running Windows. Therefore a certain level of familiarity with the Windows operating system is assumed in this manual.

The basic instructions presented in this section should be sufficient for most installation needs.

The main installation steps are as follows: (you may skip some of the steps if you do not wish or need to install certain applications)

A – If you have not already done so, insert your Gage CompuGen ISA CD into the CD-ROM drive of your computer. The AutoRun feature of Windows should kick-in and bring up the installer's main screen. If this does not happen, you can start the installer by double-clicking on the gage.exe file that you will find on the CD.

The Gage CompuGen ISA CD main screen will appear (see Figure 1 below).
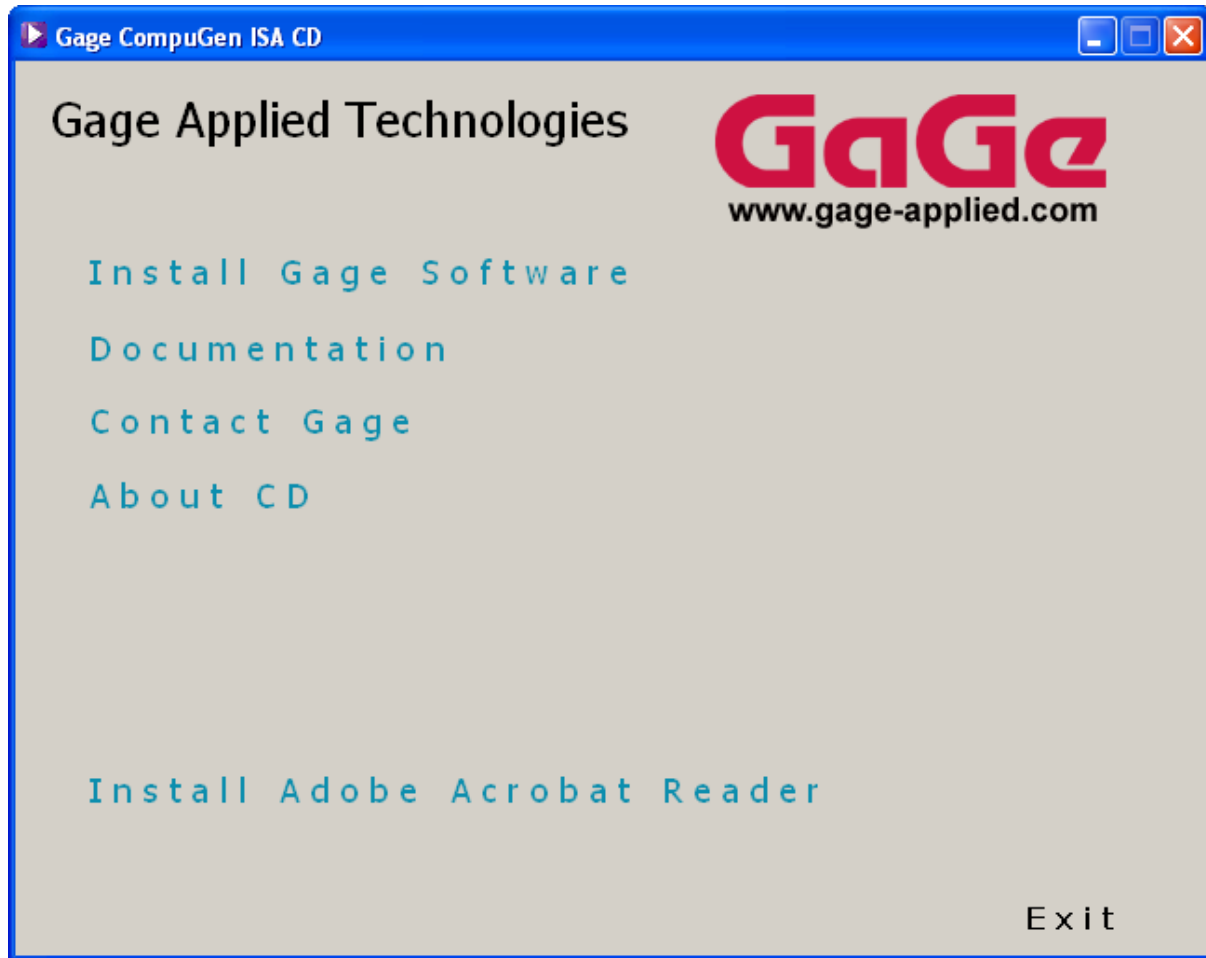
Figure 1: The Gage CompuGen CD's main screen

This window offers five possible options (not counting the Exit option):
- Install Gage Software
- Documentation
- Contact Gage
- About CD
- Install Adobe Acrobat Reader

The fourth option, About CD, is an important first step whenever troubleshooting the installation or asking for technical support from Gage. It provides valuable information about the various software drivers and application packages available on the CD. Figure 2 gives an example from the first version of this new installation package.
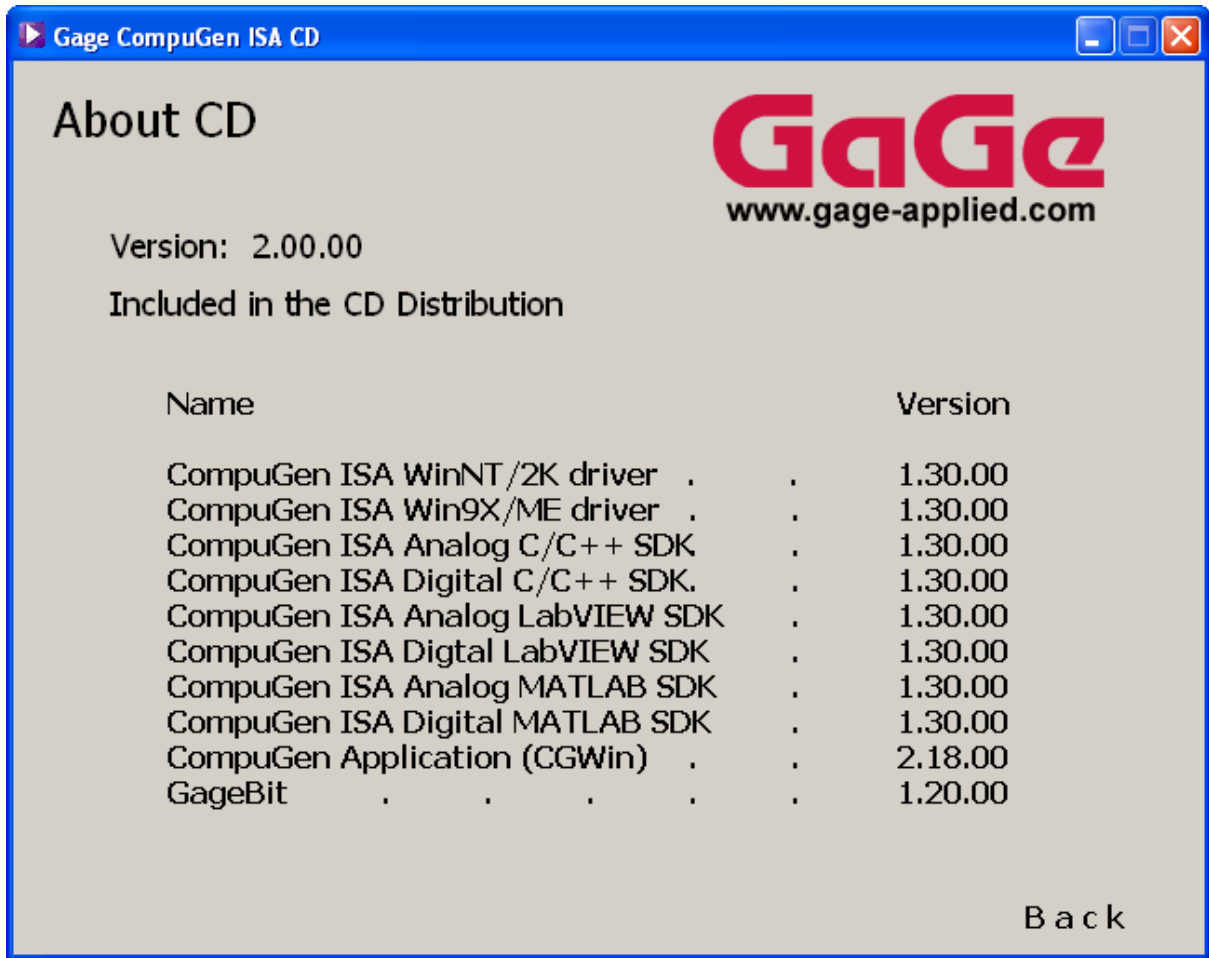
Figure 2: The About CD screen

Whenever navigating the installation software, you can use the Back button at the bottom-right of the screen to return to a previous screen in the installation hierarchy.
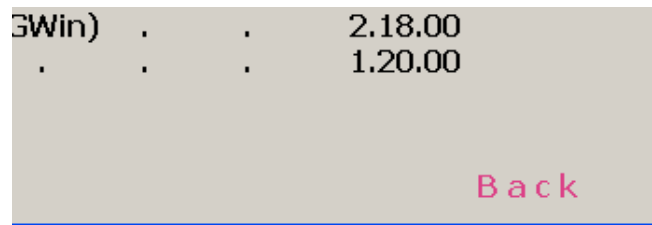
Figure 3: The Back button

The second option, Documentation, gives you access to the manuals and software readme.txt files available on the Gage CompuGen ISA CD.

If you click on Manuals, you will be given a list of available manuals to view using your default PDF viewer. If you do not have Adobe Acrobat or Adobe Acrobat Reader installed on your system, you can install it from the Gage CompuGen ISA CD by clicking on the fifth option on the Main screen, Install Adobe Acrobat Reader.
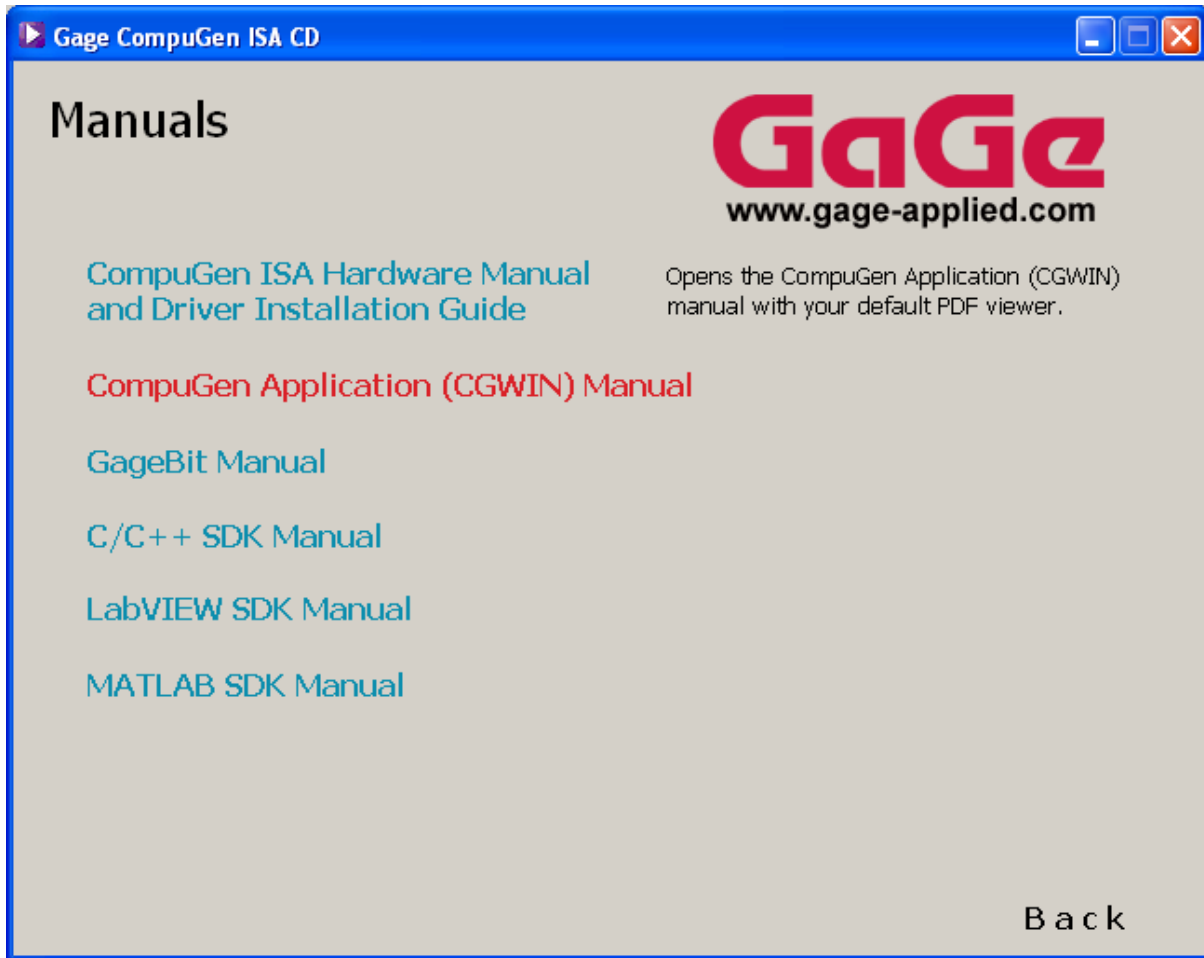
Figure 4: The Manuals screen

If you click on Readmes, from the Documentation screen, you will be given a list of the software readme.txt files for the software that is available on the Gage CompuGen ISA CD. They will open with your default .txt file viewer, usually Notepad or WordPad.
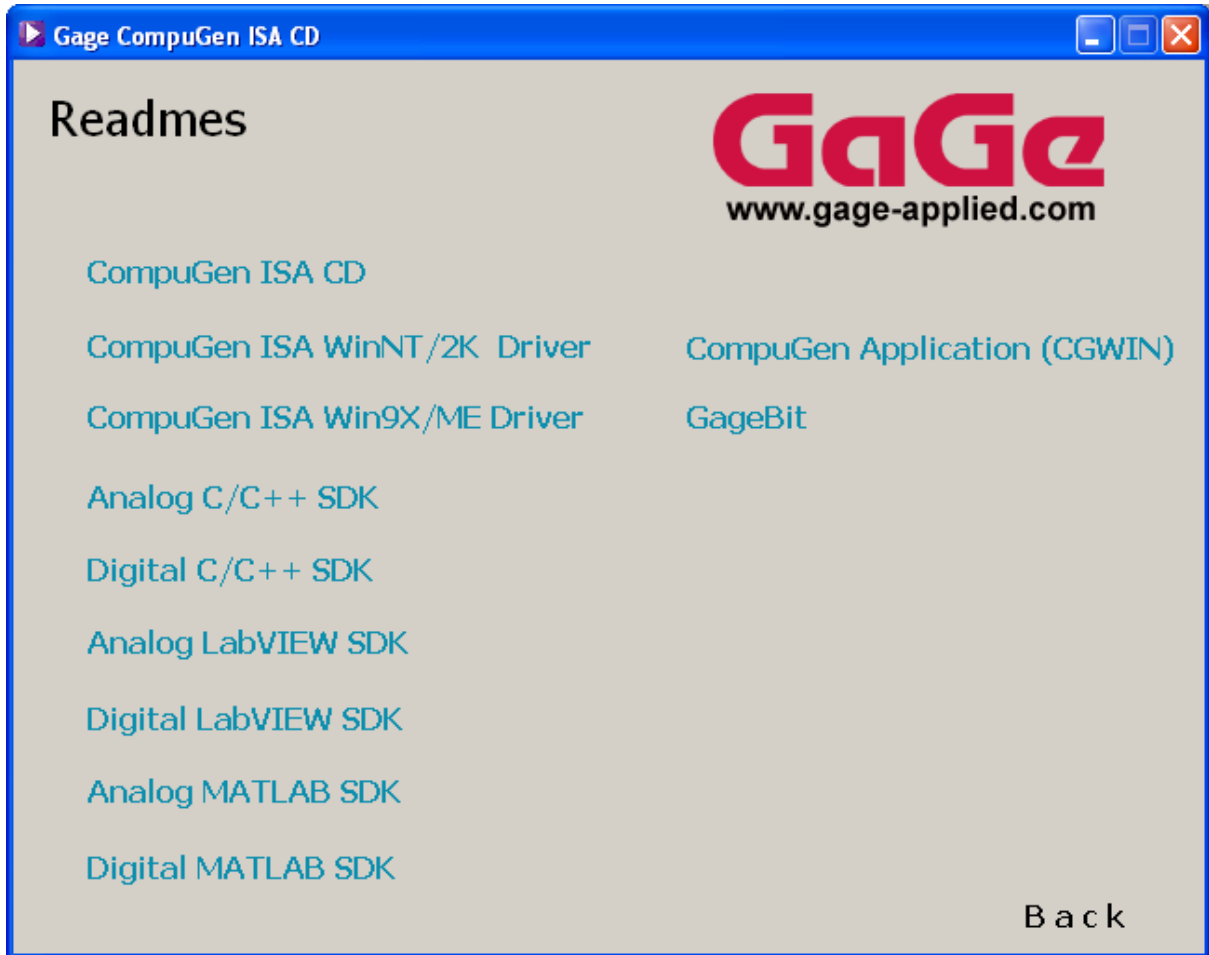
Figure 5: The Readmes screen

Another useful feature of the installer is the Contact Gage option available from the Gage CompuGen ISA CD's main screen. From this screen, you will find useful contact information for Gage for technical support.

Figure 6: The Contact screen

Also from the Gage CompuGen ISA CD's main screen, you can directly access Gage's Web site by clicking on the Web address under the Gage logo.

Figure 7: The link to Gage's Web site on the Gage CompuGen ISA CD's main screen

Now that you have become familiar with the first level of the installer, we can proceed with the installation of the CompuGen ISA drivers and the software available on the Gage CompuGen ISA CD.

B – Click on the Install Gage Software button to view the available Gage software.

The Install Software screen (Figure 8) offers four software options to install:
- CompuGen ISA Drivers
- CompuGen ISA SDKs
- CompuGen Application (for CG1100 analog output cards)
- GageBit Application (for CG3250 digital output cards and digital input cards like the CS3200)
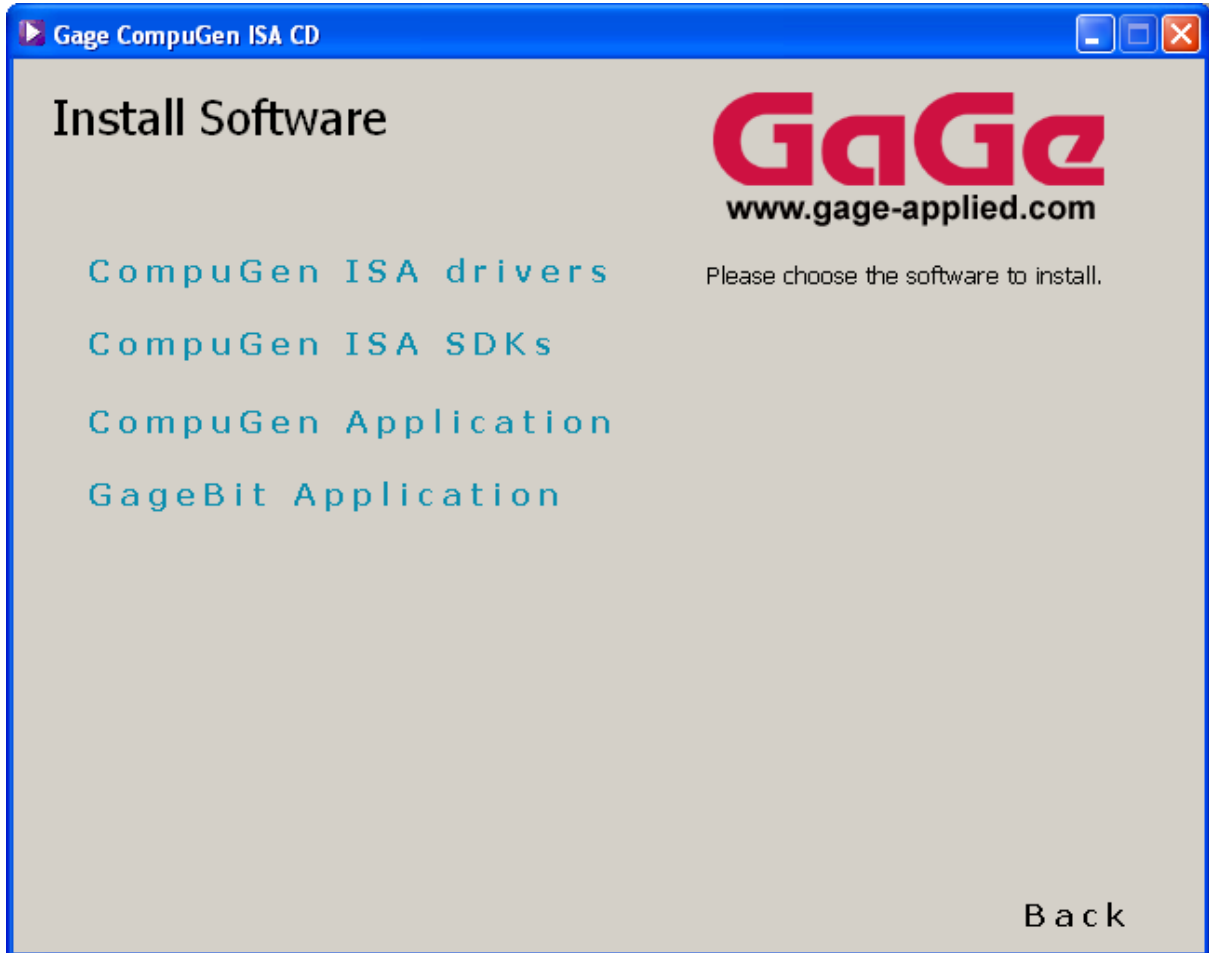
Figure 8: The Install Software screen

As you position the mouse over one of the four menu options, details of each option appear in a text box to the right of the screen (see Figure 9):
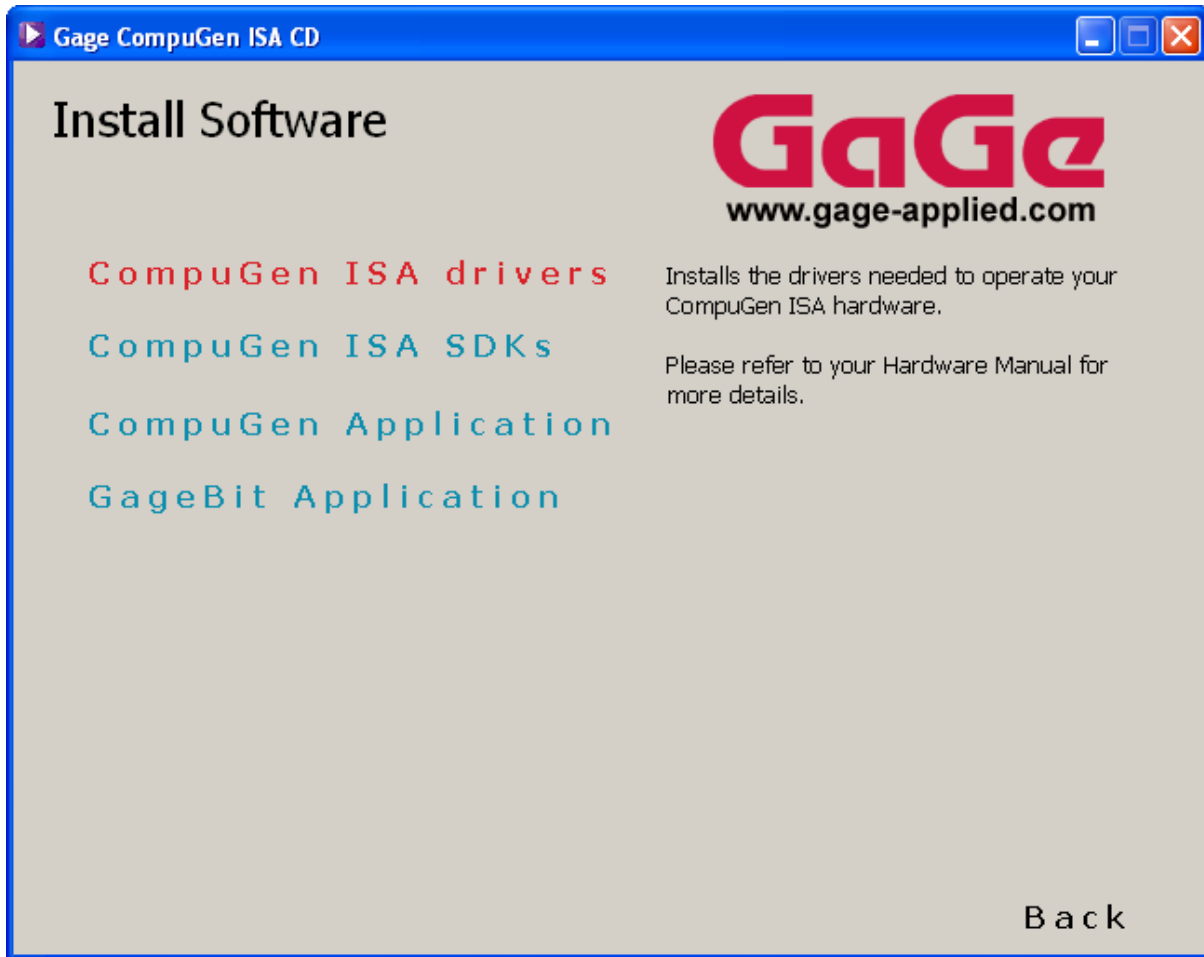
Figure 9: Example of information visible when positioning the mouse on a menu item

If you wish to leave the Install Software screen without installing any software, simply click the Back button to go back to the Gage Applied Technologies screen.

Once you are back to the main Gage CompuGen ISA CD screen, click on the Exit button located at the bottom right of the screen. The last screen you will see upon exiting is shown below (Figure 10).

Figure 10: Splash screen seen upon exiting the installer

CompuGen ISA Drivers

The Gage CompuGen ISA CD includes the CompuGen ISA Windows 9X/ME driver and the CompuGen ISA Windows NT/2K driver for current CompuGen ISA cards.

Click on the CompuGen ISA drivers button to begin installation of the CompuGen ISA drivers. The Gage CompuGen ISA CD will detect the operating system you are running and will automatically install the proper driver (9X/ME or NT/2K). We will go over the main steps of the installation for the Windows NT/2K drivers, but we will not show every screen that you will see.
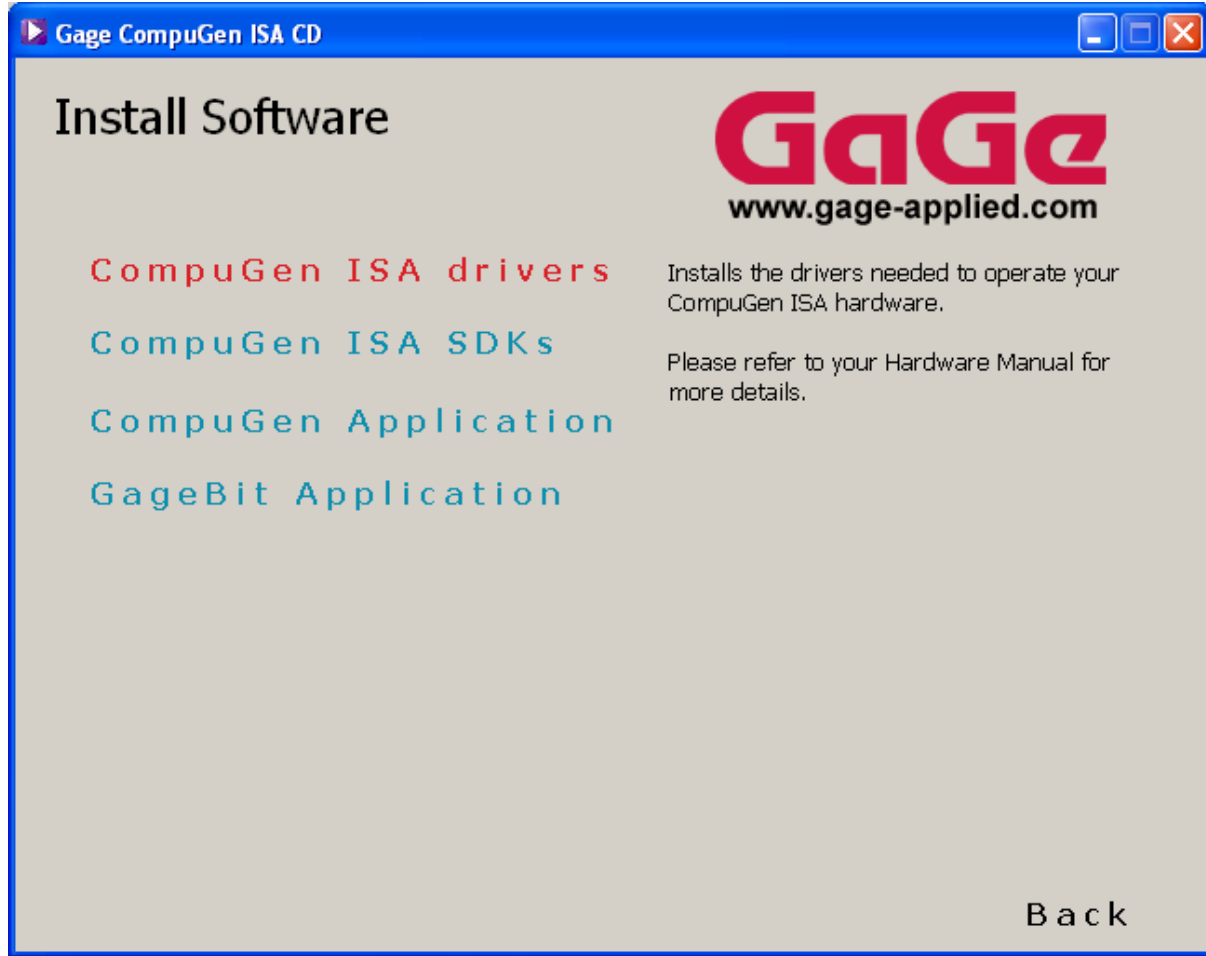
Figure 11: Selecting the CompuGen drivers from the Install Software screen

The following InstallShield Wizard screen appears:
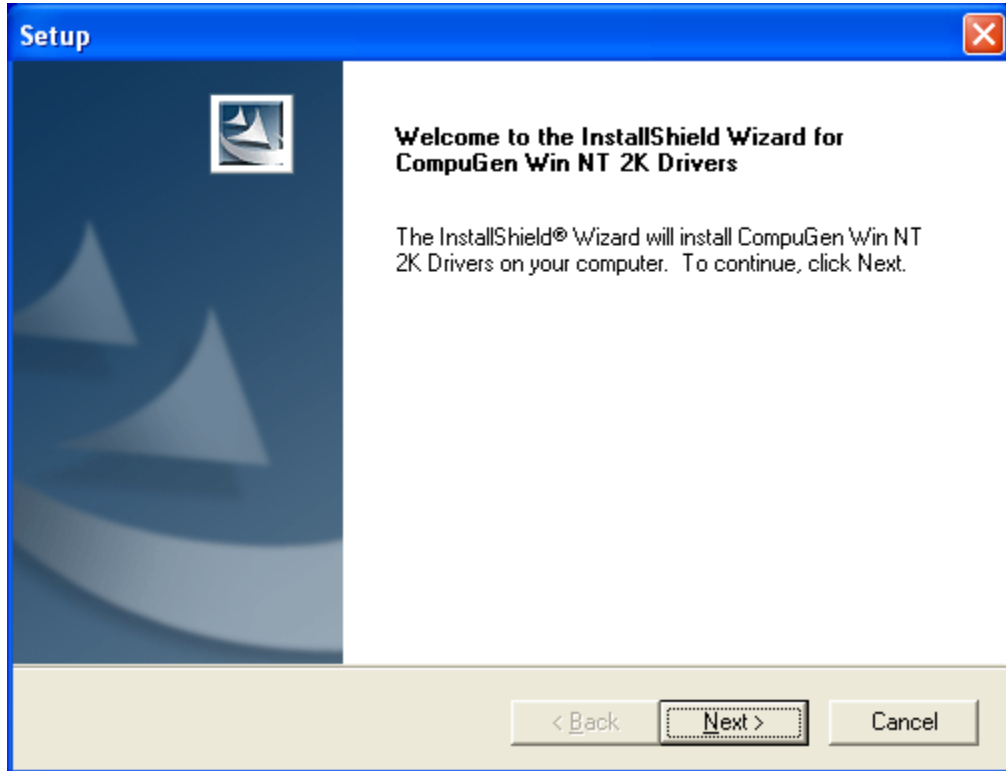
Figure 12: First screen of the CompuGen Install Wizard

Click Next to continue with the installation of the CompuGen ISA drivers.

The drivers will be installed in the O/S system drive:\Program Files\Gage\CompuGen Win NT 2K Drivers directory by default. It is recommended that you use the default destination folder.
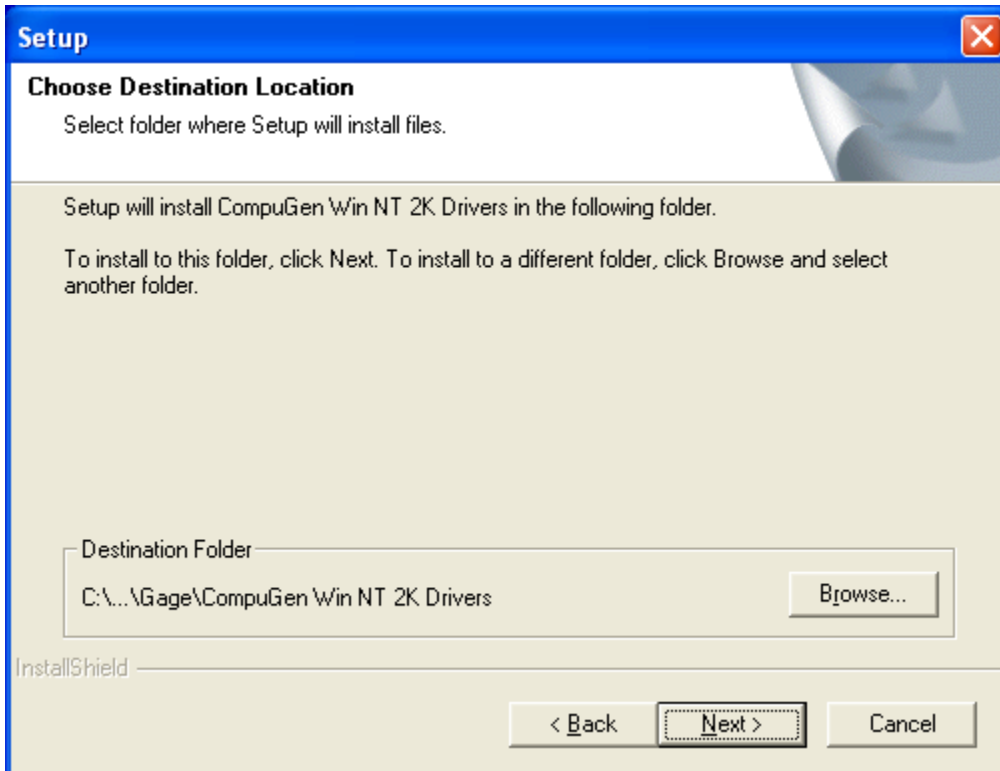
Figure 13: Destination folder for CompuGen ISA drivers

After installing the drivers, return to the Install Software screen to begin installing the free SDKs and CompuGen Application (CGWIN) for CG1100 or GageBit Application for CG3250.

CompuGen Software Development Kits (SDKs)

The CompuGen ISA Software Development Kits (SDKs) have standardized installation procedures and therefore will not be covered in detail in this manual. The steps are very similar to the CompuGen ISA driver installation.

To access available SDKs, click on the CompuGen ISA SDKs button from the Install Software screen.
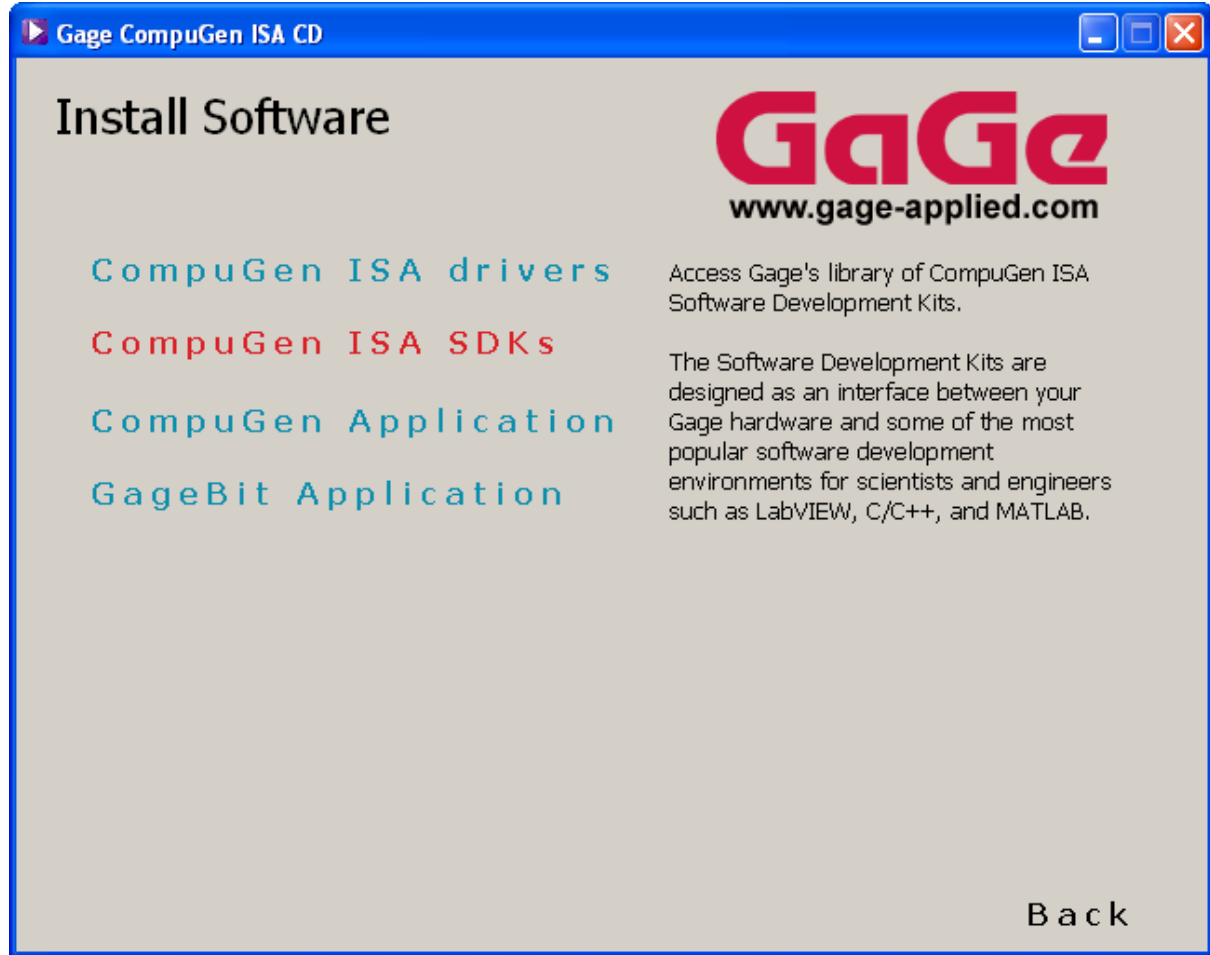
Figure 14: Accessing list of CompuGen ISA SDKs

You will see a list of the CompuGen ISA SDKs. A description for each SDK will be shown as you hover over each selection. Installation begins once you click on any one of the SDK buttons. You can also access a list of the manuals that are available on the Gage CompuGen ISA CD.
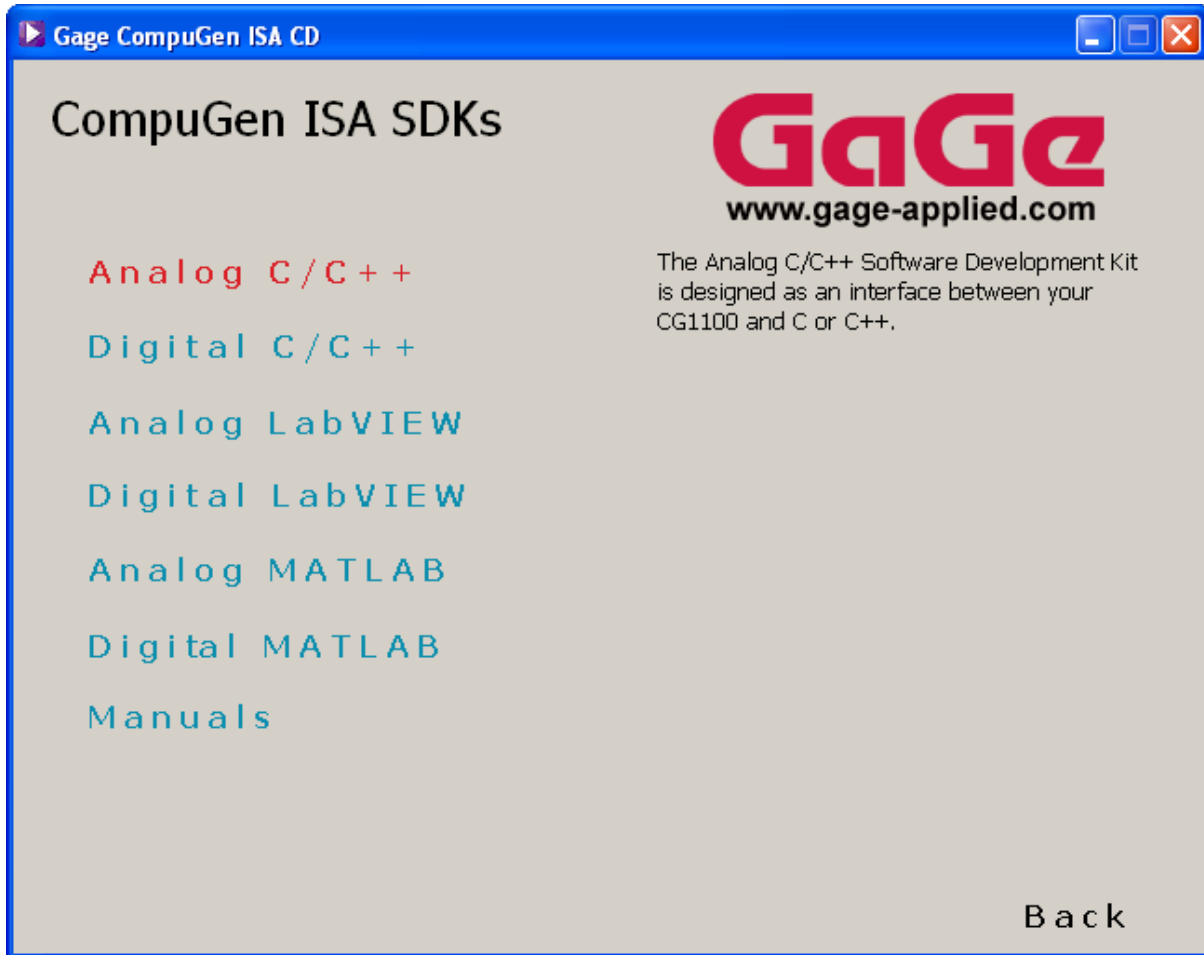
Figure 15: List of CompuGen SDKs

Once you have clicked on one of the SDKs listed, installation will begin. We will show you some of the more important installation screens below.

License Agreement screen: Carefully read the Software and Documentation License Agreement. In order to continue with the installation, you must indicate that you agree with the terms in the license agreement by clicking Yes. If you select No, the installation will be aborted.

Figure 16: License Agreement screen of an SDK Install Wizard

Customer Information: Enter your user information.

Figure 17: Customer Information screen of an SDK Install Wizard

After you have selected the destination location for the installation of your SDK, the installation will run to completion without any further input. It is recommended that you use the default destination folder:
O/S system drive:\Program Files\Gage\CompuGen SDK\CompuGen XXX YYY SDK, where XXX is Analog or Digital and YYY is the SDK programming environment (C, MATLAB, or LabVIEW).

IMPORTANT NOTE:
If you are trying to install a Software Development Kit, CGWIN or GageBit, you must first install the drivers for your hardware in order to use the software. If you do not install the drivers, the SDK sample programs and CGWIN will not work properly and GageBit will only function in Demo Mode.

CompuGen Application (CGWIN)

If you have purchased an ISA Analog CompuGen (CG1100) product from Gage, you should install the CompuGen Application. The CompuGen Application also has standardized installation procedures and therefore will not be covered in detail in this manual. The steps are similar to the CompuGen ISA driver installation.

To begin installation of the CompuGen Application, click on the CompuGen Application button from the Install Software screen.

Figure 18: Selecting CompuGen Application Installation

After you have selected the destination location for the installation of the CompuGen Application, the installation will run to completion without any further input. It is recommended that you use the default destination folder: O/S system drive:\Program Files\Gage\CGWin.

Please note that you will be asked to install the CompuGen drivers after you have installed the CompuGen Application. If you have already installed the CompuGen drivers, simply click "Finish". If you have not yet installed the CompuGen drivers, select "Yes, Install CompuGen Drivers" before you click "Finish". You will be asked to provide the path to the CompuGen drivers, please use one of the following paths:
For Windows 95/98/ME: CD-ROM:\Compugen ISA Driver\Win9X
For Windows NT/2000: CD-ROM:\Compugen ISA Driver\WinNT

IMPORTANT NOTE:
If you are trying to install a Software Development Kit, CGWIN or GageBit, you must first install the drivers for your hardware in order to use the software. If you do not install the drivers, the SDK sample programs and CGWIN will not work properly and GageBit will only function in Demo Mode.

GageBit Application

If you have purchased an ISA digital generator (CG3250) or digital capture (CS3200 & CS3200C) product from Gage, you should install the GageBit Application. The GageBit Application also has standardized installation procedures and therefore will not be covered in detail in this manual. The steps are similar to the CompuGen ISA driver installation.

To begin installation of GageBit, click on the GageBit Application button from the Install Software screen.

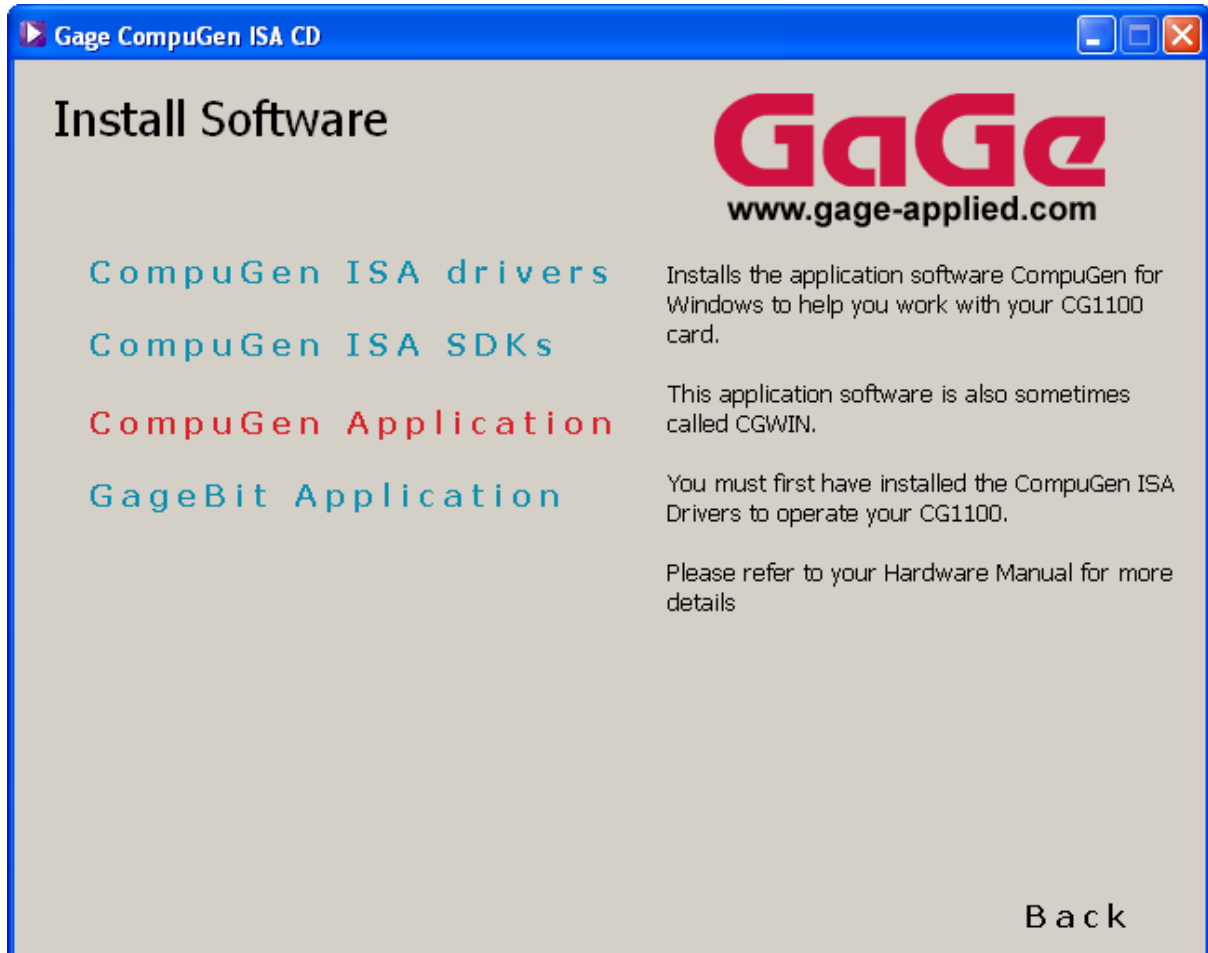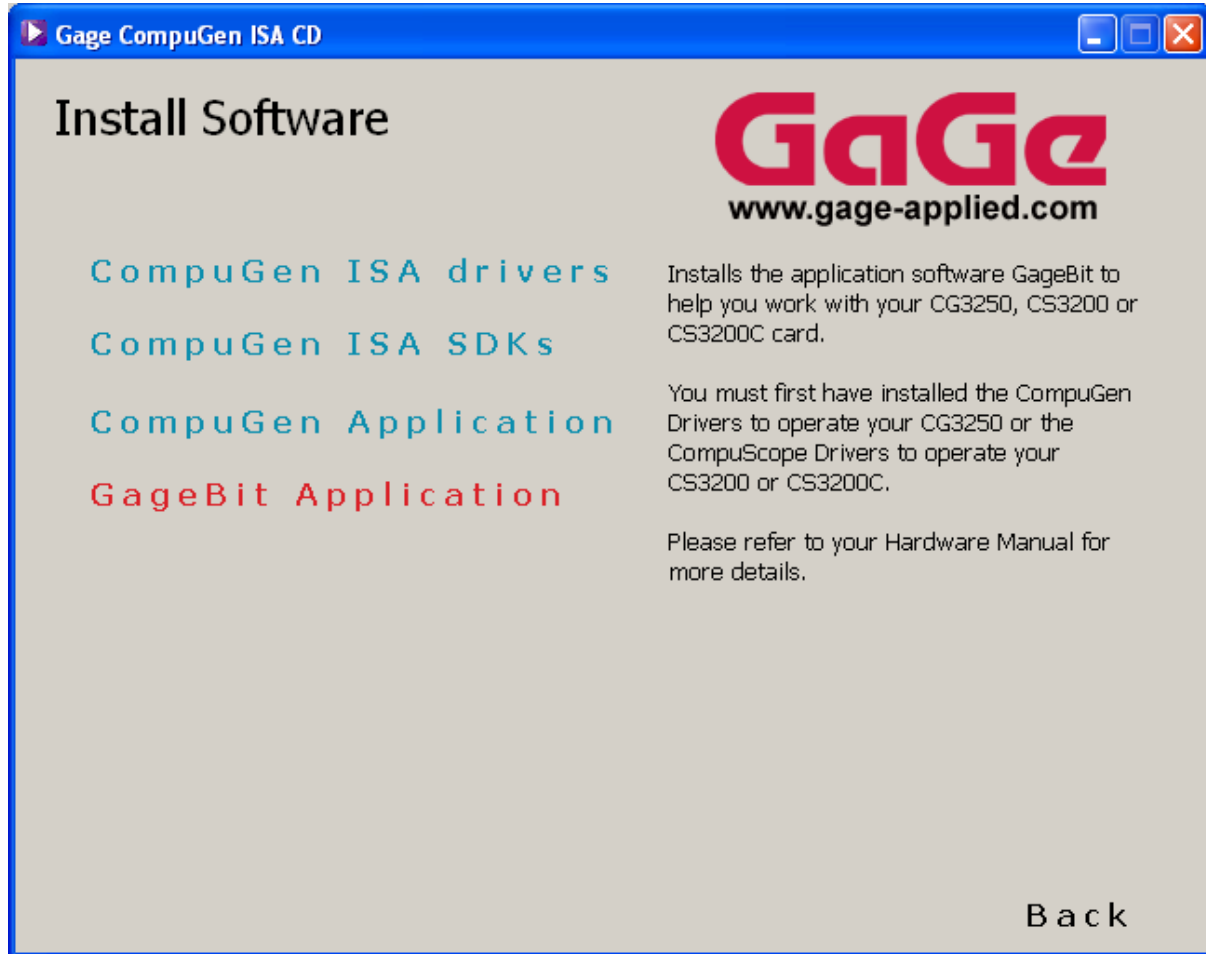*Figure 19: Selecting GageBit Installation*

After you have selected the destination location for the installation of GageBit, the installation will run to completion without any further input. It is recommended that you use the default destination folder:
O/S system drive:\Program Files\Gage\GageBit Software.

IMPORTANT NOTE:
If you are trying to install a Software Development Kit, CGWIN or GageBit, you must first install the drivers for your hardware in order to use the software. If you do not install the drivers, the SDK sample programs and CGWIN will not work properly and GageBit will only function in Demo Mode.

Technical Support

Gage Applied Technologies, Inc. offers technical support for all its products.

In order to serve you better, we have created a web-based technical support system that is available to you 24 hours a day.

By utilizing the internet to the fullest, we are able to provide you better than ever technical support without increasing our costs, thereby allowing us to provide you the ***best possible product at the lowest possible price.***

To obtain technical support, simply visit:

> www.gage-applied.com/support/support_form.php

Please complete this form and submit it. Our form processing system will intelligently route your request to the Technical Support Specialist (TSS) most familiar with the intricacies of your product. This TSS will be in contact with you within 24 hours of form submittal.

In the odd case that you have problems submitting the form on our web site, please e-mail us at

> tech-support@gage-applied.com

As opposed to automatic routing of technical support requests originating from the Gage web site, support requests received via e-mail or telephone calls are routed manually by our staff. Providing you with high-quality support may take an average of 2 to 3 days if you do not use the web-based technical support system.

Please note that Technical Support Requests received

via e-mail or by telephone will take an average of 2 to 3 days to process.

It is faster to use the web site!

When calling for support we ask that you have the following information available:

1. Version and type of your CompuGen SDK and drivers.
   (The version numbers are indicated in the About CD screen of the CompuGen ISA CD. Version numbers can also be obtained by looking in the appropriate README.TXT files)

2. Type, version and memory depth of your CompuGen card.

3. Type and version of your operating system.

4. Type and speed of your computer and bus.

5. Any extra hardware peripherals (i.e. CD-ROM, joystick, network card, etc.)

6. Were you able to reproduce the problem with standalone Gage Software (e.g. CGWIN, GageBit)?

Gage products

For ordering information, see Gage's Product Catalog or visit our web site at www.gage-applied.com

CompactPCI/PXI Bus Products	CompuScope 1610C	16 bit, 10 MS/s A/D card
	CompuScope 14100C	14 bit, 100 MS/s A/D card
	CompuScope 82GC	8 bit, 2 GS/s A/D card
	CompuScope 3200C	32 bit, 100 MHz Digital Input Card
PCI Bus Products	CompuScope 1610	16 bit, 10 MS/s A/D card
	CompuScope 1602	16 bit, 2.5 MS/s A/D card
	CompuScope 14200	14 bit, 200 MS/s A/D card
	CompuScope 14105	14 bit, 105 MS/s A/D card
	CompuScope 14100	14 bit, 100 MS/s A/D card
	CompuScope 1450	14 bit, 50 MS/s A/D card
	CompuScope 12400	12 bit, 400 MS/s A/D card
	CompuScope 12100	12 bit, 100 MS/s A/D card
	CompuScope 1250	12 bit, 50 MS/s A/D card
	CompuScope 82G	8 bit, 2 GS/s A/D card
	CompuScope 8500	8 bit, 500 MS/s A/D card
	CompuScope 3200	32 bit, 100 MHz Digital Input Card
CompuGen PCI	CompuGen 4300	12 bit, 4-channel, 300 MHz Analog Output Card
	CompuGen 8150	12 bit, 8-channel, 150 MHz Analog Output Card
	CompuGen 11G	12 bit, 1 GHz Analog Output Card
CompuGen ISA	CompuGen 1100	12 bit, 80 MS/s D/A card
	CompuGen 3250	32 bit, 50 MHz Digital Output Card
Application Software	GageScope Software	World's Most Powerful Oscilloscope Software
	GageBit Software	Digital Input/Digital Output Software
	CompuGen for Windows (CGWIN)	Arbitrary Waveform Generator Software for Windows
Software Development Kits	CompuGen SDK for C/C++	CompuScope SDK for C/C#
	CompuGen SDK for LabVIEW	CompuScope SDK for MATLAB
	CompuGen SDK for MATLAB	CompuScope SDK for LabVIEW
		CompuScope SDK for LabWindows/CVI
Instrument Mainframes	Instrument Mainframe 7500	Instrument Mainframes for Housing CompuScope PCI bus and CompuGen ISA bus Products
	Instrument Mainframe 2000	
	Instrument Mainframe 8000C	Instrument Mainframes for Housing CompuScope CompactPCI/PXI bus products