

G2 DownloadInterfaces

User's Guide

Version 2015



G2 DownloadInterfaces User's Guide, Version 2015

December 2015

The information in this publication is subject to change without notice and does not represent a commitment by Gensym Corporation.

Although this software has been extensively tested, Gensym cannot guarantee error-free performance in all applications. Accordingly, use of the software is at the customer's sole risk.

Copyright (c) 1985-2015 Gensym Corporation

All rights reserved. No part of this document may be reproduced, stored in a retrieval system, translated, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of Gensym Corporation.

Gensym®, G2®, Optegrity®, and ReThink® are registered trademarks of Gensym Corporation.

NeurOn-Line™, Dynamic Scheduling™, G2 Real-Time Expert System™, G2 ActiveXLink™, G2 BeanBuilder™, G2 CORBALink™, G2 Diagnostic Assistant™, G2 Gateway™, G2 GUIDE™, G2GL™, G2 JavaLink™, G2 ProTools™, GDA™, GFI™, GSI™, ICP™, Integrity™, and SymCure™ are trademarks of Gensym Corporation.

Telewindows is a trademark or registered trademark of Microsoft Corporation in the United States and/or other countries. Telewindows is used by Gensym Corporation under license from owner.

This software is based in part on the work of the Independent JPEG Group.

Copyright (c) 1998-2002 Daniel Veillard. All Rights Reserved.

SCOR® is a registered trademark of PRTM.

License for Scintilla and SciTE, Copyright 1998-2003 by Neil Hodgson, All Rights Reserved.

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>).

All other products or services mentioned in this document are identified by the trademarks or service marks of their respective companies or organizations, and Gensym Corporation disclaims any responsibility for specifying which marks are owned by which companies or organizations.

Gensym Corporation
52 Second Avenue
Burlington, MA 01803 USA
Telephone: (781) 265-7100
Fax: (781) 265-7101

Part Number: DOC061-1200

Contents

	Preface	v
	About this Guide	v
	Software Requirements	v
	Audience	v
	Conventions	vi
	Related Documentation	vii
	Customer Support Services	x
Chapter 1	Overview	1
	Introduction	1
	What the Wizard Does	1
	Why Use the Wizard?	2
Chapter 2	Installing G2 DownloadInterfaces	3
	Introduction	3
	Software Requirements	3
	Checking the Software Installation	4
Chapter 3	Running the Wizard	5
	Introduction	5
	Running G2 DownloadInterfaces	5
	Viewing the Welcome Panel	7
	Configuring the G2 Connection Details	8
	Specifying the Host	9
	Specifying the Port	9
	Configuring the G2 Class Name	10
	Entering the G2 Class	11
	Forcing an Interface Download	11
	Generating Stubs	11

Viewing the Summary Panel	12
Displaying the Interface Downloading Progress	13
Connecting to G2	14
Downloading Class Data	14
Viewing the Finished Panel	14

Chapter 4 Using the Command-Line Options 15

Introduction	15
-host	16
-port	16
-class or -classes	17
-force	17
-stubs	18
+g	18
+t	18
+v	18

Index 19

Preface

Describes this guide and the conventions that it uses.

About this Guide	v
Software Requirements	v
Audience	v
A Note About the API	vi
Conventions	vi
Related Documentation	viii
Customer Support Services	ix



About this Guide

This guide describes the basic features of the G2 DownloadInterfaces wizard and explains how and why to use it.

Software Requirements

For information about the software requirements and installation of this version of G2 DownloadInterfaces, refer to the *readme-javalink.html* file supplied with G2 JavaLink, which includes this and other important instructions.

Audience

This document assumes that you are familiar with the features and syntax of the Java programming language, and that you know how to develop Java applications. It also assumes that you are familiar with the syntax of G2.

Conventions

This guide uses the following typographic conventions and conventions for defining system procedures.

Typographic

Convention Examples	Description
g2-window, g2-window-1, ws-top-level, sys-mod	User-defined and system-defined G2 class names, instance names, workspace names, and module names
history-keeping-spec, temperature	User-defined and system-defined G2 attribute names
true, 1.234, ok, "Burlington, MA"	G2 attribute values and values specified or viewed through dialogs
Main Menu > Start KB Workspace > New Object create subworkspace Start Procedure	G2 menu choices and button labels
conclude that the x of y ...	Text of G2 procedures, methods, functions, formulas, and expressions
<i>new-argument</i>	User-specified values in syntax descriptions
<u>text-string</u>	Return values of G2 procedures and methods in syntax descriptions
File Name, OK, Apply, Cancel, General, Edit Scroll Area	GUIDE and native dialog fields, button labels, tabs, and titles
File > Save Properties	GMS and native menu choices
workspace	Glossary terms

Convention Examples	Description
<i>c:\Program Files\Gensym\</i>	Windows pathnames
<i>/usr/gensym/g2/kbs</i>	UNIX pathnames
<i>spreadsh.kb</i>	File names
<i>g2 -kb top.kb</i>	Operating system commands
<i>public void main() gsi_start</i>	Java, C and all other external code

Note Syntax conventions are fully described in the *G2 Reference Manual*.

Procedure Signatures

A procedure signature is a complete syntactic summary of a procedure or method. A procedure signature shows values supplied by the user in *italics*, and the value (if any) returned by the procedure underlined. Each value is followed by its type:

```
g2-clone-and-transfer-objects
(list: class item-list, to-workspace: class kb-workspace,
 delta-x: integer, delta-y: integer)
-> transferred-items: g2-list
```

Related Documentation

G2 Core Technology

- *G2 Bundle Release Notes*
- *Getting Started with G2 Tutorials*
- *G2 Reference Manual*
- *G2 Language Reference Card*
- *G2 Developer's Guide*
- *G2 System Procedures Reference Manual*

- *G2 System Procedures Reference Card*
- *G2 Class Reference Manual*
- *Telewindows User's Guide*
- *G2 Gateway Bridge Developer's Guide*

G2 Utilities

- *G2 ProTools User's Guide*
- *G2 Foundation Resources User's Guide*
- *G2 Menu System User's Guide*
- *G2 XL Spreadsheet User's Guide*
- *G2 Dynamic Displays User's Guide*
- *G2 Developer's Interface User's Guide*
- *G2 OnLine Documentation Developer's Guide*
- *G2 OnLine Documentation User's Guide*
- *G2 GUIDE User's Guide*
- *G2 GUIDE/UII Procedures Reference Manual*

G2 Developers' Utilities

- *Business Process Management System Users' Guide*
- *Business Rules Management System User's Guide*
- *G2 Reporting Engine User's Guide*
- *G2 Web User's Guide*
- *G2 Event and Data Processing User's Guide*
- *G2 Run-Time Library User's Guide*
- *G2 Event Manager User's Guide*
- *G2 Dialog Utility User's Guide*
- *G2 Data Source Manager User's Guide*
- *G2 Data Point Manager User's Guide*
- *G2 Engineering Unit Conversion User's Guide*
- *G2 Error Handling Foundation User's Guide*
- *G2 Relation Browser User's Guide*

Bridges and External Systems

- *G2 ActiveXLink User's Guide*
- *G2 CORBALink User's Guide*
- *G2 Database Bridge User's Guide*
- *G2-ODBC Bridge Release Notes*
- *G2-Oracle Bridge Release Notes*
- *G2-Sybase Bridge Release Notes*
- *G2 JMail Bridge User's Guide*
- *G2 Java Socket Manager User's Guide*
- *G2 JMSLink User's Guide*
- *G2 OPCLink User's Guide*
- *G2 PI Bridge User's Guide*
- *G2-SNMP Bridge User's Guide*
- *G2 CORBALink User's Guide*
- *G2 WebLink User's Guide*

G2 JavaLink

- *G2 JavaLink User's Guide*
- *G2 DownloadInterfaces User's Guide*
- *G2 Bean Builder User's Guide*

G2 Diagnostic Assistant

- *GDA User's Guide*
- *GDA Reference Manual*
- *GDA API Reference*

Customer Support Services

You can obtain help with this or any Gensym product from Gensym Customer Support. Help is available online, by telephone, by fax, and by email.

To obtain customer support online:

➔ Access G2 HelpLink at www.gensym-support.com.

You will be asked to log in to an existing account or create a new account if necessary. G2 HelpLink allows you to:

- Register your question with Customer Support by creating an Issue.
- Query, link to, and review existing issues.
- Share issues with other users in your group.
- Query for Bugs, Suggestions, and Resolutions.

To obtain customer support by telephone, fax, or email:

➔ Use the following numbers and addresses:

	Americas	Europe, Middle-East, Africa (EMEA)
Phone	(781) 265-7301	+31-71-5682622
Fax	(781) 265-7255	+31-71-5682621
Email	service@gensym.com	service-ema@gensym.com

To obtain G2 JavaLink specific customer support by e-mail:

➔ Use the following address:

javalink-service@gensym.com

Overview

Introduces G2 DownloadInterfaces wizard.

Introduction	1
What the Wizard Does	1
Why Use the Wizard?	2



Introduction

G2 DownloadInterfaces is an easy-to-use software wizard for generating Java interfaces and classes from G2 classes. The wizard guides you through the steps you need to complete to use this G2 JavaLink utility:

com.gensym.jgi.download.DownloadInterfaces

What the Wizard Does

Using the G2 JavaLink utility *com.gensym.jgi.download.DownloadInterfaces*, the wizard connects to a specified G2 and generates the appropriate Java interfaces and classes for a specified G2 class and its respective subclasses.

For detailed information on how G2 DownloadInterfaces exports a class to Java and where it places that class, see the section “How G2 Classes Map to Java Classes” in Chapter 2, “Mapping Between G2 and Java” in the *G2 JavaLink User’s Guide*.

Why Use the Wizard?

You use the wizard to create interfaces and classes. There are two main reasons why you need to do this:

- To make required classes and interfaces available before running a JavaLink application.

When an object is passed to G2 JavaLink from G2, JavaLink attempts to create an instance of the corresponding Java class. JavaLink may be configured to generate and compile any Java classes required at runtime automatically. However, because downloading interfaces at runtime can be time-consuming, it is preferable to download classes ahead of time before they are required.

Note When displaying the properties dialog for a G2 object in a Java application created by using Telewindows2 Toolkit, G2 JavaLink obtains the information from G2 at runtime, regardless of whether you have downloaded interfaces ahead of time.

- To make available any G2 class required by a Java class. When you write a Java class that references a G2 class, the Java source file will not compile without the corresponding interface for the G2 class.

For more information regarding the G2 DownloadInterfaces utility and the Java G2 class mapping, see Chapter 2 of the *G2 JavaLink User's Guide*.

Installing G2 DownloadInterfaces

This chapter describes the installation of G2 DownloadInterfaces.

Introduction	3
Software Requirements	3
Checking the Software Installation	4



Introduction

There are no separate installation instructions for G2 DownloadInterfaces, since it is installed as part of G2 JavaLink. For more information about the installation, refer to the *readme-javalink.html* file, supplied with G2 JavaLink, which includes installation and other important instructions.

Software Requirements

For information about the software requirements for this version of G2 DownloadInterfaces, see the *readme-javalink.html* file supplied with G2 JavaLink.

Checking the Software Installation

When all of the required software is installed on your system, you can verify the G2 DownloadInterfaces installation by running the wizard in self-test mode.

To run the wizard in self-test mode:

➔ From a command window, execute the command as follows:

```
java com.gensym.beanbuilder.G2DownloadInterfaces +v
```

The application should display a message reflecting the state of the self test and also return the version of G2 DownloadInterfaces, such as:

```
Gensym G2 DownloadInterfaces Version version-number  
Self Test Passed
```

where *version-number* is the current version.

Running the Wizard

This chapter describes how to use the G2 DownloadInterfaces wizard.

Introduction	5
Running G2 DownloadInterfaces	5
Viewing the Welcome Panel	7
Configuring the G2 Connection Details	8
Configuring the G2 Class Name	10
Viewing the Summary Panel	12
Displaying the Interface Downloading Progress	13
Viewing the Finished Panel	14



Introduction

You use the G2 DownloadInterfaces utility by running a wizard, which provides a graphical user interface (GUI) to the utility. Alternatively, you can run the utility without the wizard.

Running G2 DownloadInterfaces

Before running G2 DownloadInterfaces, you must:

- Launch G2.
- Load the KB containing the classes for which you require Java interfaces.

You can run G2 DownloadInterfaces with or without a graphical user interface.

To run G2 DownloadInterfaces with a GUI:

➔ From a command window, execute this command:

```
java com.gensym.beanbuilder.G2DownloadInterfaces
```

or

➔ Launch the utility from the Start menu, by choosing the following from your Gensym G2 program group:

G2 JavaLink > Download Interfaces

To run G2 DownloadInterfaces without a GUI:

➔ From a command window, execute this command:

```
java com.gensym.beanbuilder.G2DownloadInterfaces  
-class MY-CLASS
```

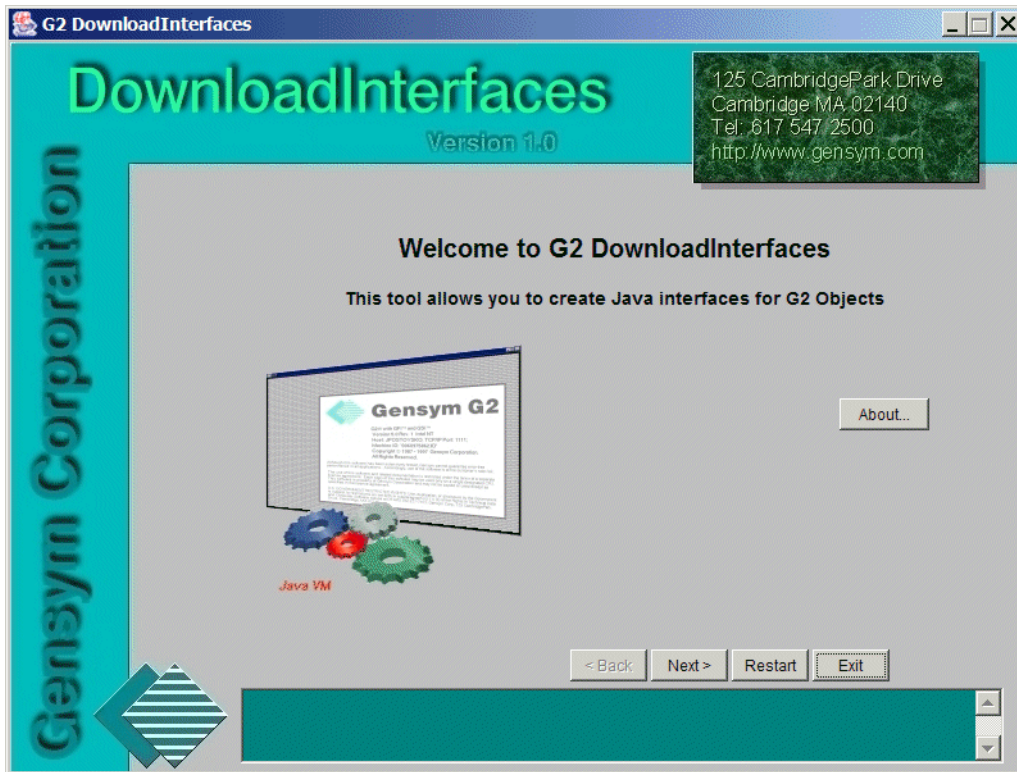
This command runs G2 DownloadInterfaces on *MY-CLASS* without a GUI.

The remaining instructions assume you have started G2 DownloadInterfaces with a GUI.

For information on running the G2 Bean Builder without a GUI, see [Using the Command-Line Options](#).

Viewing the Welcome Panel

Once you start G2 DownloadInterfaces, the Welcome panel appears:



This panel displays the version of G2 DownloadInterfaces currently running and provides these buttons:

Clicking this button:	Does this:
About	Displays the About screen that shows the current version of G2 Download Interfaces.
Back	Displays the previous panel. This button is initially inactive, because the Welcome panel is the first panel.
Next	Displays the next panel. Some panels cause this button to be inactive until you enter all of the information on that panel.

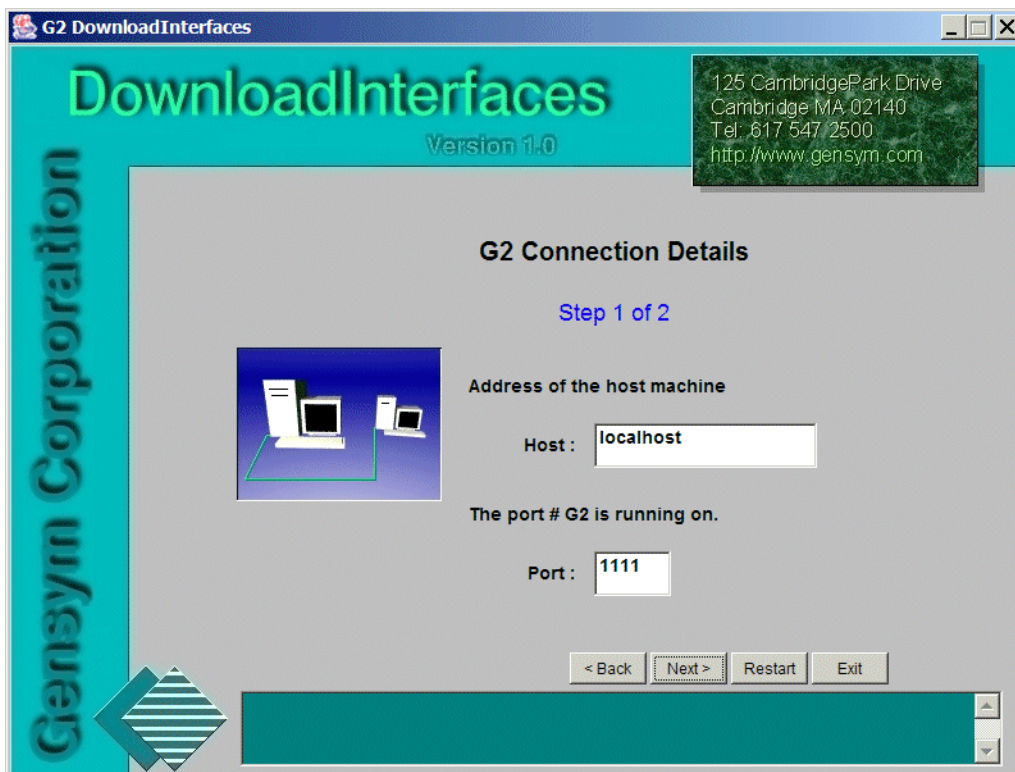
Clicking this button:	Does this:
Restart	Aborts the current build and restarts the session.
Exit	Presents a Confirm dialog box, asking you to confirm exiting from G2 DownloadInterfaces.

The four navigation buttons and the Help button are common to all of the G2 DownloadInterfaces panels.

Click Next to advance to the G2 Connection Details panel.

Configuring the G2 Connection Details

The G2 Connection Details panel configures the connection between G2 DownloadInterfaces and a G2 host:



This panel has two specific controls:

- Host field
- Port field

Configure the Host and Port, then click Next to advance to the G2 Class Name panel.

Specifying the Host

The Host field holds the name or IP address of the machine running the target G2.

By default, the default Host is `localhost`, unless you started G2 DownloadInterfaces with the `-host` command-line option as described in [Using the Command-Line Options](#).

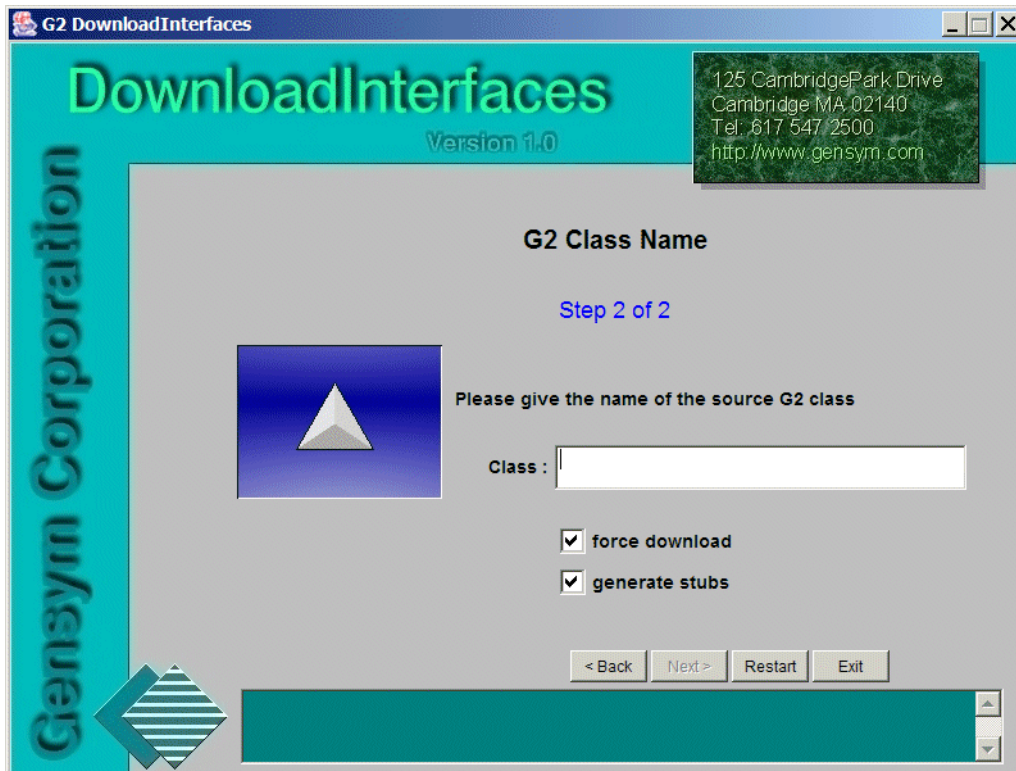
Specifying the Port

The Port field holds the TCP/IP port number at which G2 is running on the target machine.

By default, the default Port is 1111, unless you started G2 DownloadInterfaces with the `-port` command-line option as described in [Using the Command-Line Options](#).

Configuring the G2 Class Name

The G2 Class Name panel lets you specify the G2 class for which to download a Java interface:



This panel has three specific controls:

- Class field
- Force download checkbox
- Generate stubs checkbox

Configure these controls, then click Next to advance to the Summary panel.

Entering the G2 Class

The Class field holds the G2 class for which you want to download interfaces. When entering the G2 class through the GUI, case does not matter but you must use hyphens if they appear in the G2 class name.

By default, the Class field is blank, unless you started G2 DownloadInterfaces with the `-class` command-line option, as described in [Using the Command-Line Options](#).

The Next button is disabled unless this field has a value.

Forcing an Interface Download

The force download checkbox allows interfaces, and stubs if that checkbox is checked, to be created during development so that they pre-exist at deployment time. You should use this option when a G2 class or its methods have changed in some way. Forcing the download guarantees that the Java stubs are up-to-date.

When the option is not checked, JavaLink only creates the interfaces, and stubs if that option is checked, that it requires, reusing any that were previously downloaded.

You use this feature when using G2 DownloadInterfaces to “repackage” previously packaged G2 classes, perhaps for creating a JAR file with a new file name or for changing the graphics of the icon.

By default, the force download checkbox is true. You can disable the force download option by unchecking the checkbox.

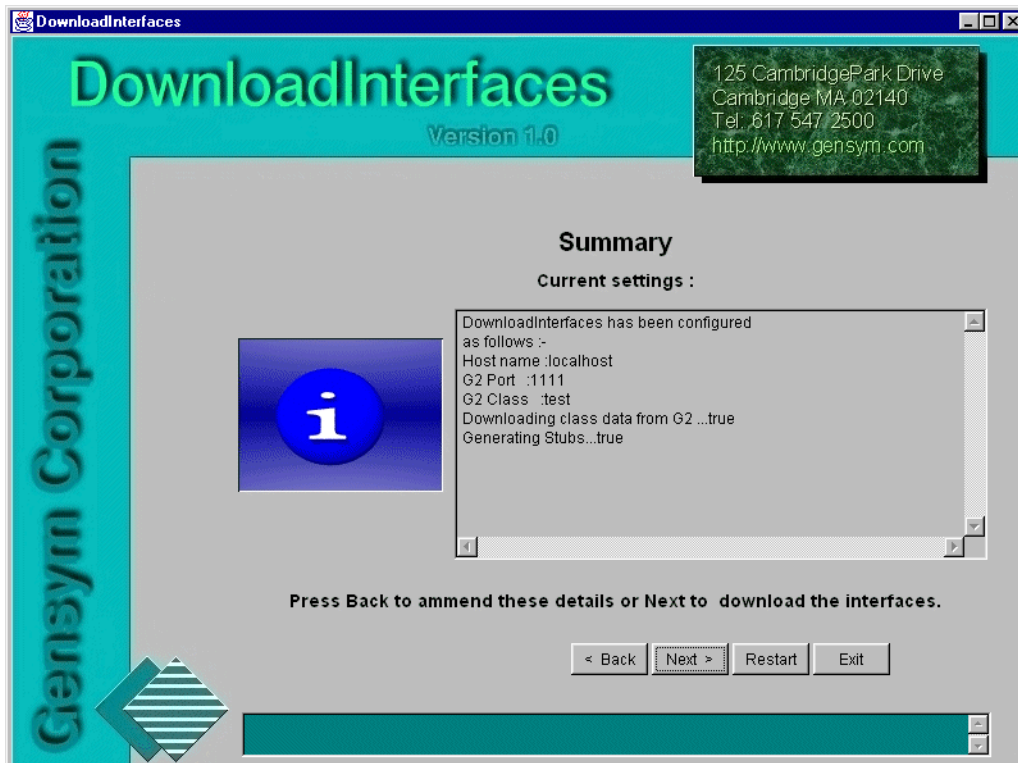
Generating Stubs

The generate stubs checkbox causes G2 DownloadInterfaces to create implementation Java class files for each Java interface corresponding to the G2 class being downloaded.

By default, the generate stubs option is true, unless you started G2 DownloadInterfaces with the `-stubs` option, as described in [Using the Command-Line Options](#).

Viewing the Summary Panel

The Summary panel displays all of the values you entered in each of the previous panels:

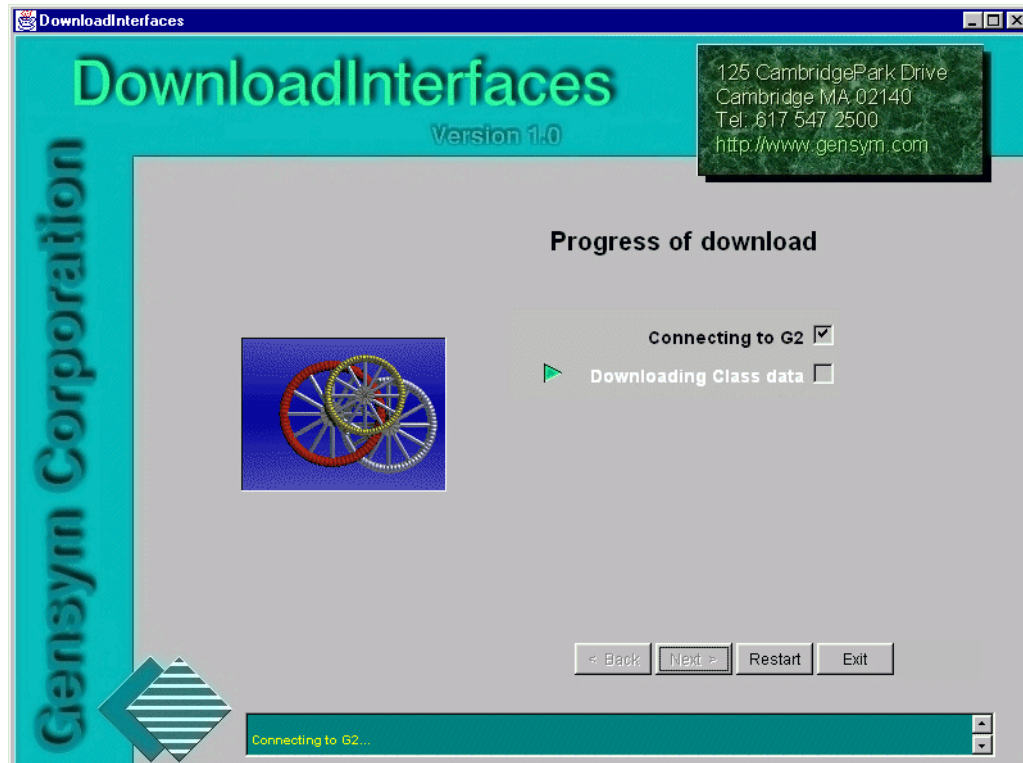


At this point, you do not need to configure any more information for the utility to begin building the requested Java classes and interfaces. To change any of the values you entered, click Back.

Verify the current settings, then click Next to advance to the Progress of Download panel where G2 DownloadInterfaces immediately begins downloading interfaces.

Displaying the Interface Downloading Progress

The Progress of download panel displays progress as the interface is downloaded:



This panel has two specific controls, which indicate the progress of each stage of downloading interfaces:

- Connecting to G2
- Downloading class data

As each stage begins, the color of the checkbox label changes and the status bar at the bottom updates. As each stage is completed, the color changes again and the check box representing that stage is checked, if it completed successfully. The example above indicates that G2 DownloadInterfaces successfully connected to G2 and that it is currently downloading class data, as indicated by the marker.

During the download process, both the Back and Next navigation buttons are disabled.

When the download process is complete, the wizard automatically advances to the Finished panel.

Connecting to G2

During the Connecting to G2 stage, G2 DownloadInterfaces attempts to establish a connection with the specified G2. If the connection attempt fails, the error is reported to the wizard and no further building takes place.

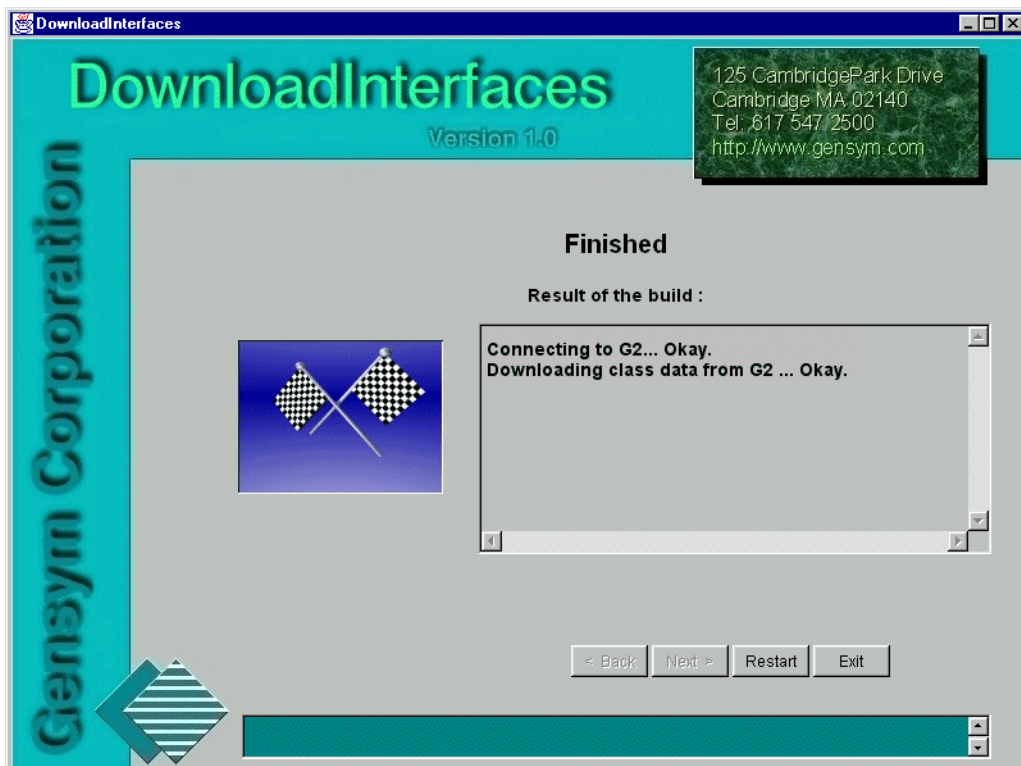
Downloading Class Data

Once a connection has been established, G2 DownloadInterfaces attempts to extract information regarding the target G2 class.

If the specified class is not found, the application informs the user and downloading stops. Otherwise, all of the relevant data is obtained from the target G2 for G2 DownloadInterfaces to complete its task.

Viewing the Finished Panel

The Finished panel displays a report of the build, detailing the results of the download:



Using the Command-Line Options

Describes G2 DownloadInterface's command-line options.

Introduction	15
-host	16
-port	16
-class or -classes	17
-force	17
-stubs	18
+g	18
+t	18
+v	18



Introduction

You can start the G2 DownloadInterfaces utility by using one or more of the following command-line options:

- *-host*
- *-port*
- *-class or -classes*
- *-force*

- *-stubs*
- *+g*
- *+t*
- *+v*

-host

Specifies the name or IP address of the machine on which the target G2 is running. If you do not use this command-line option, the utility uses `localhost` as the default value.

To use the `-host` option:

```
➔ java com.gensym.beanbuilder.G2DownloadInterfaces  
    -host [machine-name | IP-address]
```

where *machine-name* and *IP-address* can be a machine name or an IP address. For example:

```
java com.gensym.beanbuilder.G2DownloadInterfaces  
    -host mc1
```

or

```
java com.gensym.beanbuilder.G2DownloadInterfaces  
    -host 1.2.3.4
```

If you use this command-line option when using the wizard, then the host you enter appears automatically in the G2 Connection Details panel, as described in [Specifying the Host](#).

-port

Specifies the port number of the machine on which the G2 process is running. If you do not use this command-line option, the utility uses port 1111 as the default value.

To use the `-port` option:

```
➔ java com.gensym.beanbuilder.G2DownloadInterfaces  
    -port port-number
```

where *port-number* is the G2 port number. For example:

```
java com.gensym.beanbuilder.G2DownloadInterfaces  
    -port 1112
```

If you use this command-line option when using the wizard, then the port number you enter appears automatically in the G2 Connection Details panel, as described in [Specifying the Port](#).

-class or -classes

Specifies the G2 class for which you wish to obtain downloaded Java classes and interfaces.

To use the -class or -classes option:

```
➔ java com.gensym.beanbuilder.G2DownloadInterfaces  
   -class| -classes classname
```

where *classname* is the class to download. When specifying *classname* and not using the GUI, you must use all capital letters and include hyphens, unless the G2 class explicitly contains lower-case letters. When specifying the *-classes* command-line option, separate the class names with spaces. For example:

```
java com.gensym.beanbuilder.G2DownloadInterfaces  
   -class MY-CLASS
```

```
java com.gensym.beanbuilder.G2DownloadInterfaces  
   -classes MY-CLASS1 MY-CLASS2 MY-CLASS3
```

If you use this command-line option when using the wizard, then the class name you enter appears automatically in the G2 Class Name panel, as described in [Entering the G2 Class](#).

If you are not using the wizard, this option is required when launching G2 DownloadInterfaces, so that the utility knows which class to download.

-force

Specifies whether to force an interface download. The default for this option is false when running G2 Download Interfaces without a GUI.

To use the -force option:

```
➔ java com.gensym.beanbuilder.G2DownloadInterfaces  
   -force
```

This command-line option is only relevant when running G2 DownloadInterfaces without a GUI. When using the GUI, you can check and uncheck the force download option, as needed.

-stubs

Specifies whether to generate the implementations for every Java interface created, even if the G2 user-defined class has been previously downloaded. The default value is false.

To use the `-stubs` option:

```
→ java com.gensym.beanbuilder.G2DownloadInterfaces  
    -stubs
```

If you use this command-line option when using the wizard, then the generate stubs checkbox is checked in the G2 Class Name panel, as described in [Generating Stubs](#).

+g

Launches G2 DownloadInterfaces with the graphical user interface wizard. When you launch G2 DownloadInterfaces with no command-line option, you get the GUI, by default. When you launch it with the `-class` command-line option, you do not get the GUI, unless you use the `+g` command-line option.

+t

Sets the trace output for the G2 DownloadInterfaces utility to true. By default, tracing is not enabled. The trace output can provide information about problems encountered while downloading G2 classes.

+v

Runs the G2 DownloadInterfaces verification test. By default, the verification test is not run when you launch the utility. For more information, see [Checking the Software Installation](#).

@ A B C D E F G H I J K L M
N O P Q R S T U V W X Y Z

A

About...button

B

Back button
buttons

- About...
- Back
- Exit
- Next
- Restart

C

-class command-line option

classes

- downloading data for
- specifying G2
 - using command-line option
 - using wizard

-classes command-line option

command-line options

- +g*
- +t*
- +v*
- class*
- classes*
- force*
- host*
- port*

running G2 DownloadInterfaces, using

-stubs

commands

- for checking software installation
- for running G2 DownloadInterfaces
 - with a GUI
 - without a GUI

connecting to G2

connection, G2, configuring

customer support services

D

downloading

- class data

- interfaces

- configuring G2 class

- forcing

DownloadInterfaces utility

E

Exit button

F

Finished panel

-force command-line option

force download option

- use to repackage G2 classes

forcing interface download

- using command-line option

- using wizard

G

+g command-line option

G2

- classes

- configuring connection to

- connecting to

- host

- port

G2 Class Name panel

G2 Connection Details panel

G2 DownloadInterfaces

- features of

- generating Java classes, using

- installing

- reasons for using

- running

- in self-test mode

- using command-line options

- using the wizard

- with GUI
- without GUI

GUI

- command-line option for launching with running G2 DownloadInterfaces
 - with
 - without

H

host

- specifying
 - using command-line option
 - using wizard

-host command-line option

I

installation

- checking
 - software requirements for

installing G2 DownloadInterfaces

N

Next button

P

port

- specifying
 - using command-line option
 - using wizard

-port command-line option

Progress of Download panel

R

Restart button

S

software installation

- See* installation

software requirements

stubs

- generating
 - using command-line option
 - using wizard

- stubs* command-line option

Summary panel

T

- +t* command-line option

TCP/IP port

tracing, command-line option for

V

- +v* command-line option

W

Welcome panel