SSIS Framework Community Edition  
Documentation and User Guide

Andy Leonard

**Revision History:**

19 Jan 2016 Andy Leonard Initial release

17 Jul 2017 Andy Leonard Added Literal Override and execute\_catalog\_parent\_package scripts.

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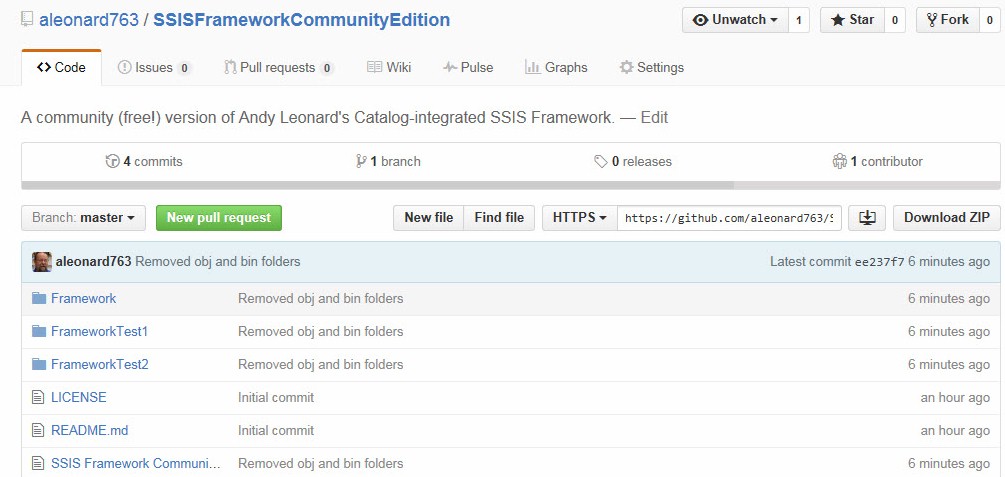
# General

In summary, the steps for installing SSIS Framework Community Edition are:

* [Obtain the code](#_Obtain_the_Code)
* [Add an SSIS Catalog](#_Add_an_SSIS) to a SQL Server instance
* [Execute the SSIS Framework Community Edition T-SQL scripts](#_Execute_the_SSIS)
* [Deploy the SSIS Framework Community Edition SSIS projects](#_Deploy_the_SSIS)
* [Test!](#_Test)

# Obtain the Code

To obtain the code, connect to GitHub at <https://github.com/aleonard763/SSISFrameworkCommunityEdition>:

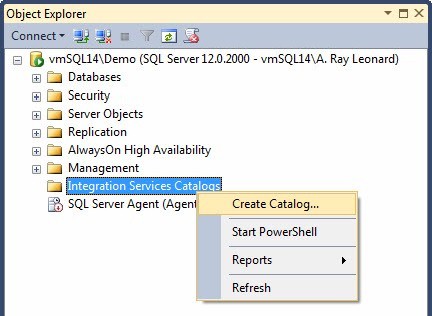


Save the code to a location you can readily access.

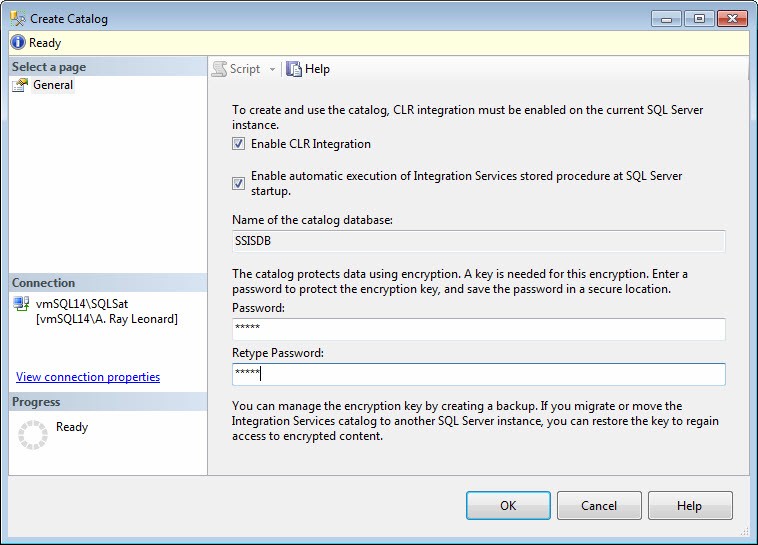
# Add an SSIS Catalog

If you already have an SSIS Catalog configured on an instance of SQL Server, you may skip this step.

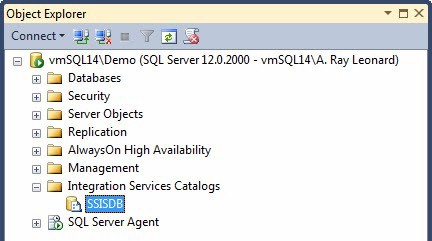
Use SQL Server Management Studio (SSMS) to connect to the instance of SQL Server and open Object Explorer. Right-click the Integration Services Catalogs node and click Create Catalog:



When the Create Catalog window displays, Check the “Enable CLR Integration” checkbox to enable additional controls on the page. You don’t have to, but I recommend you check the “Enable automatic execution of Integration Services stored procedure at SQL Server startup” checkbox. You will need to supply a password (twice):

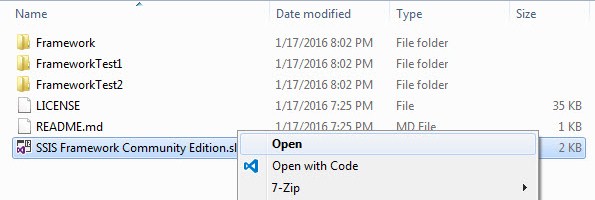


Once created, the SSIS Catalog will appear as shown below:

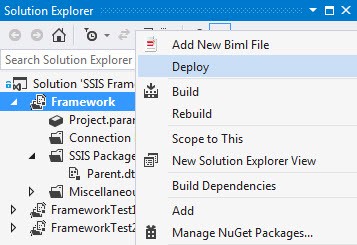


# Deploy the SSIS Framework Community Edition SSIS Projects

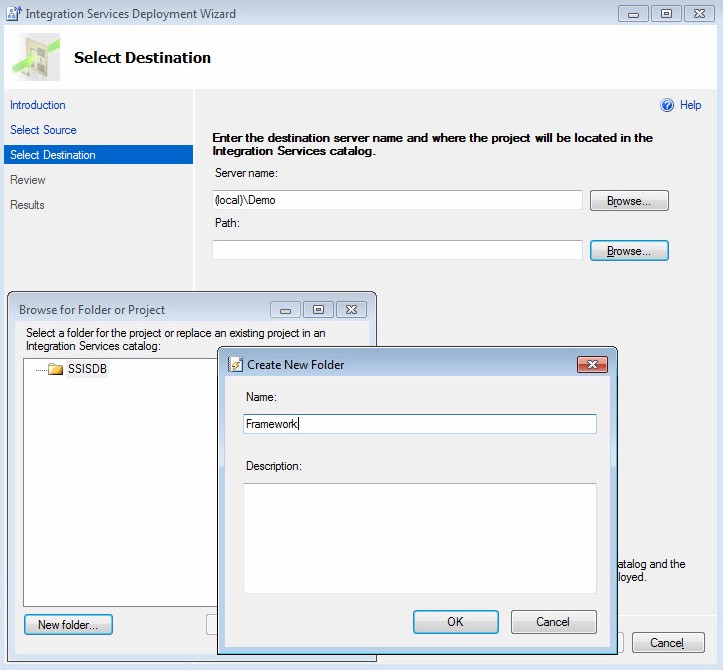
Open the SSIS Framework Community Edition Visual Studio solution file from the SSISFrameworkCommunityEdition GitHub project folder:



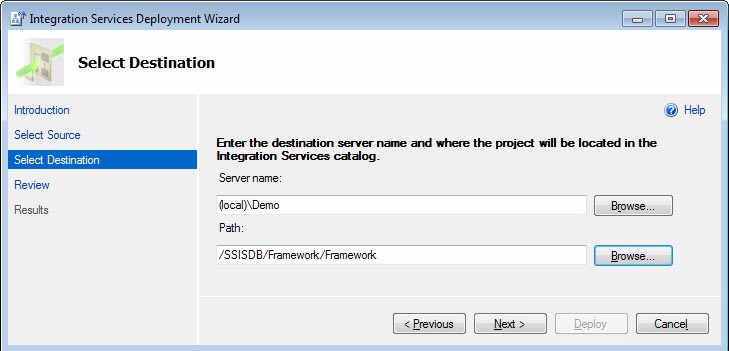
Deploy the projects to the SSIS Catalog hosted on your SQL Server instance:

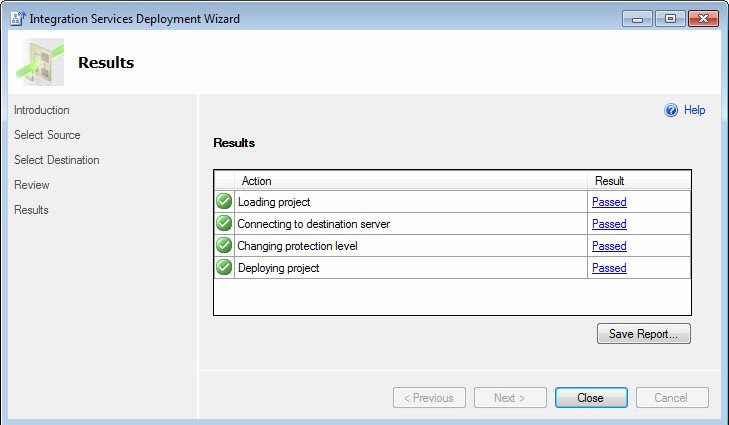


To align the deployments with the SSIS Framework Community Edition metadata you deployed by executing the T-SQL scripts, deploy the Framework project to an SSIS Catalog Folder named “Framework”:

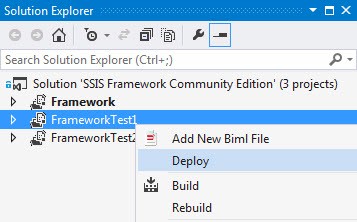


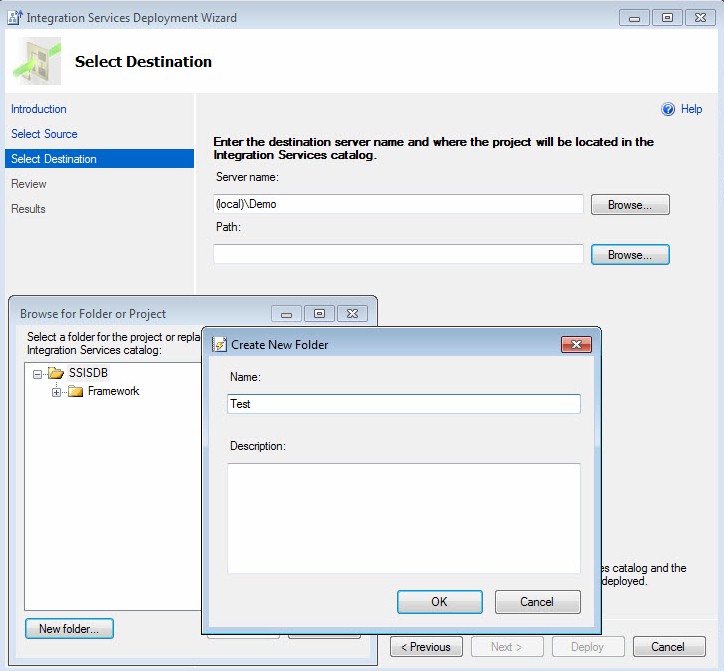
Follow the steps of the Integration Services Deployment Wizard until the Framework SSIS project is deployed:

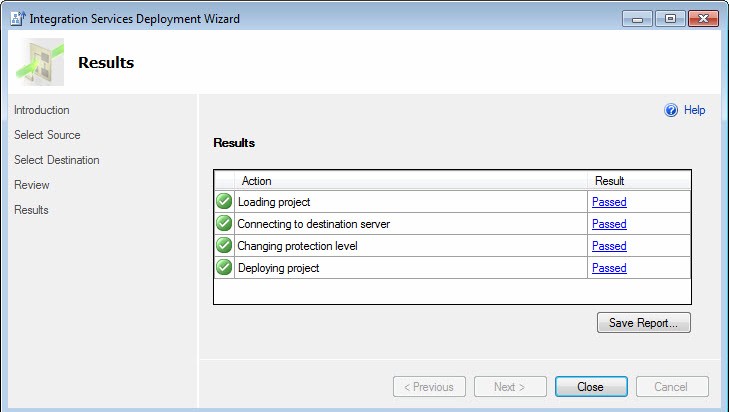




Once the Framework SSIS project is deployed, deploy the FrameworkTest1 and FrameworkTest2 SSIS projects. To align the deployments with the SSIS Framework Community Edition metadata you deployed by executing the T-SQL scripts, deploy the Framework project to an SSIS Catalog Folder named “Test”:

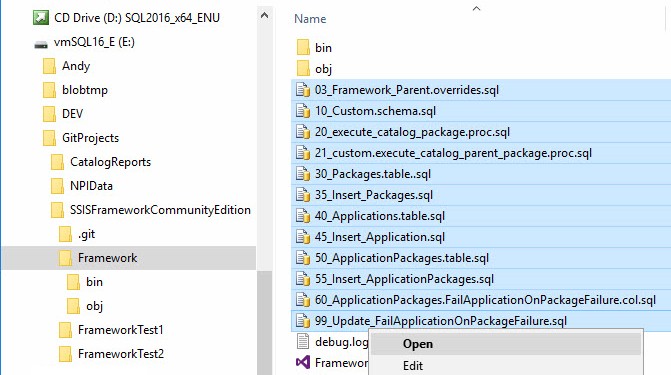




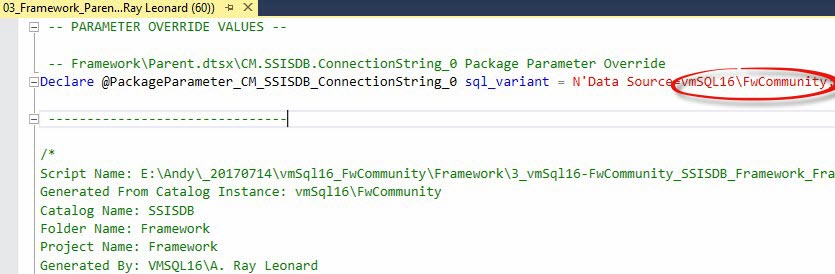


# Execute the SSIS Framework Community Edition T-SQL Scripts

Navigate to the location you stored the SSISFrameworkCommunityEdition GitHub project. Open the Framework folder and then open the T-SQL scripts:



Execute the scripts in numerical order (by the number at the beginning of each file name):

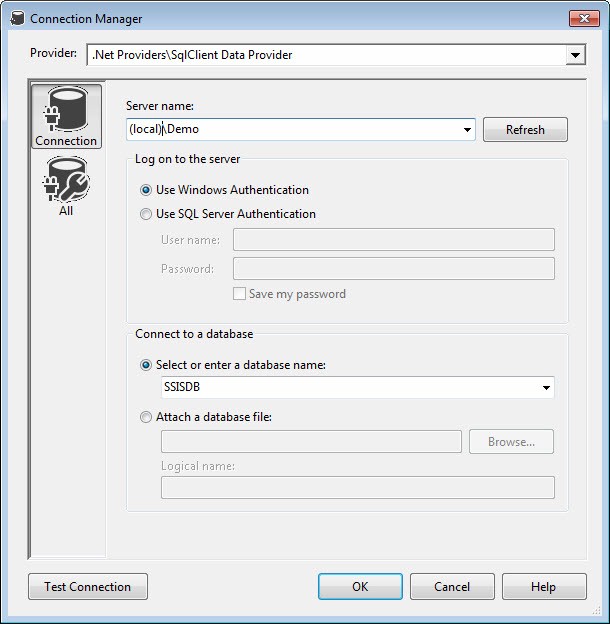


When executing the “03\_Framework\_Parent.overrides.sql” script, take care to update the Data Source portion of the connection string parameter so that it “points” to your instance of the SSIS Framework.

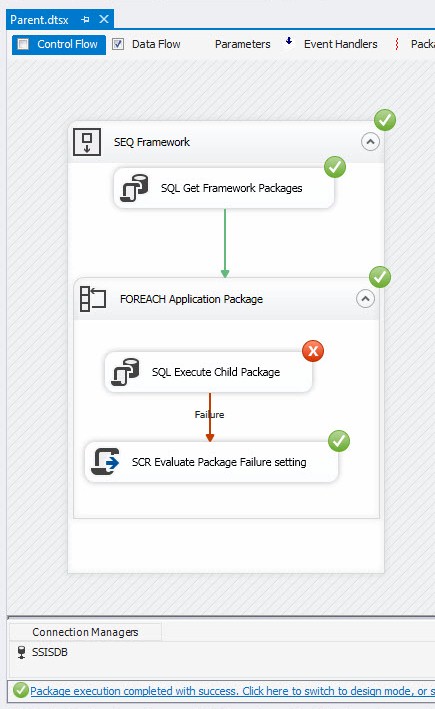
# Test

To test the deployment, execute the Parent.dtsx package in the Framework SSIS project.

Your first test will likely fail, unless you first configure the SSISDB connection manager to connect to your instance of SQL Server:

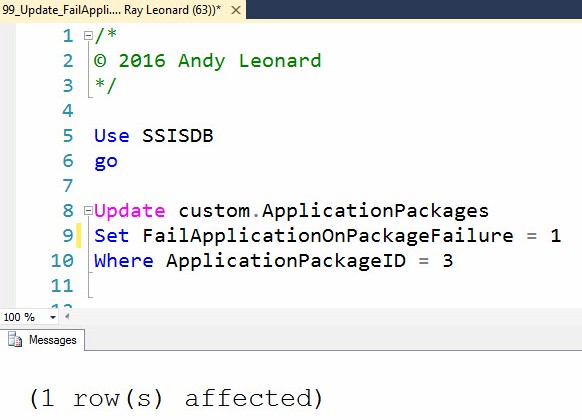


A successful test should appear as shown here:

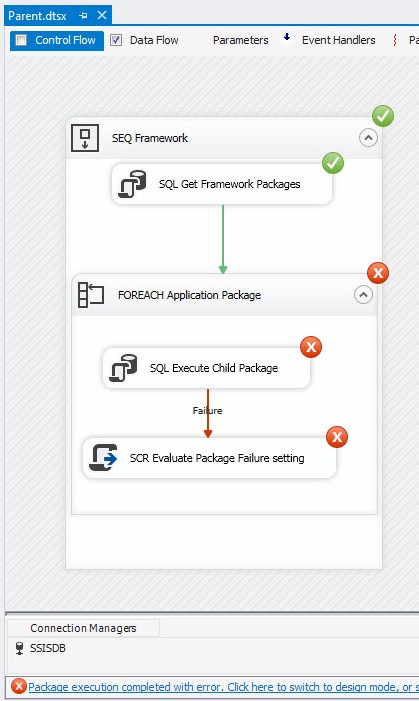


Wait. The execution failed. Well, the execution of a single package failed, but that is the default configuration. Note the Parent package execution succeeded. Why? The FailApplicationonPackageFailure bit is configured to allow the package that failed to be fault tolerant.

To reconfigure the project, open the T-SQL script named 99\_Update\_FailApplicationOnPackageFailure.sql. If you edit the script to change the value of the FailApplicationOnPackageFailure bit value for the Application-Package identified as ApplicationPackageID 3, and then execute the edited script, you can have a failure of the one package to cause the application to fail:



A second test execution results in a failed execution, as shown here:



# Adding an Application to SSIS Framework Community Edition

You may look at what you’ve built and ask, “How do I add an SSIS project to the SSIS Framework Community Edition?” That’s an excellent question. Adding a new SSIS Application to the SSIS Framework Community Edition consists of three steps and a test:

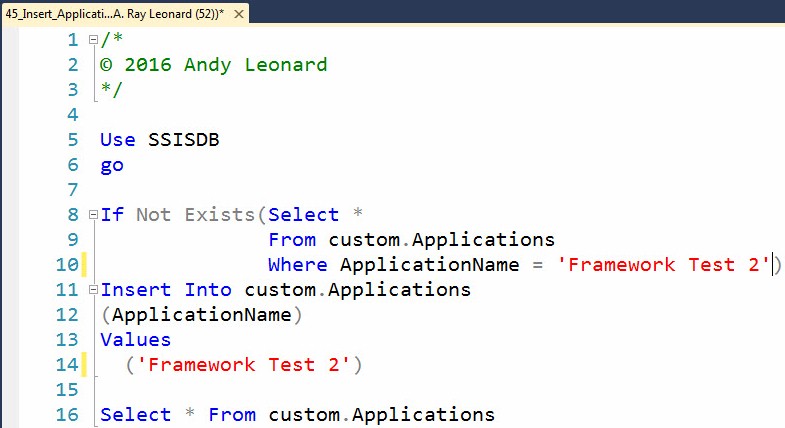
* Add an SSIS Application
* Add Package metadata (if needed)
* Create Application-Package mappings
* Test

## Add an SSIS Application

Adding an SSIS Application to SSIS Framework Community Edition is a fairly straightforward exercise. And, you’ve already done it when you executed the T-SQL scripts. Each “5” script – 35\_Insert\_Packages.sql, 45\_Insert\_Application.sql, and 55\_Insert\_ApplicationPackages.sql – was used to build the metadata for the “Framework Test” SSIS Application you just executed in the test.

Let’s use those same T-SQL scripts as templates for our next SSIS Application.

Begin by adding the metadata for the SSIS Application, which we will name “Framework Test 2” (because I’m feeling very creative as I type this ☺). Open 45\_Insert\_Application.sql and edit the T-SQL so that it appears as shown below:



You may be reading this and asking, “Andy, couldn’t you have included text I could copy and paste?” the answer is definitely, “Yes. Yes I could have.” I omitted it intentionally. I want you to become extremely familiar with the metadata management required for using SSIS Framework Community Edition. There’s no better way to learn than by doing.

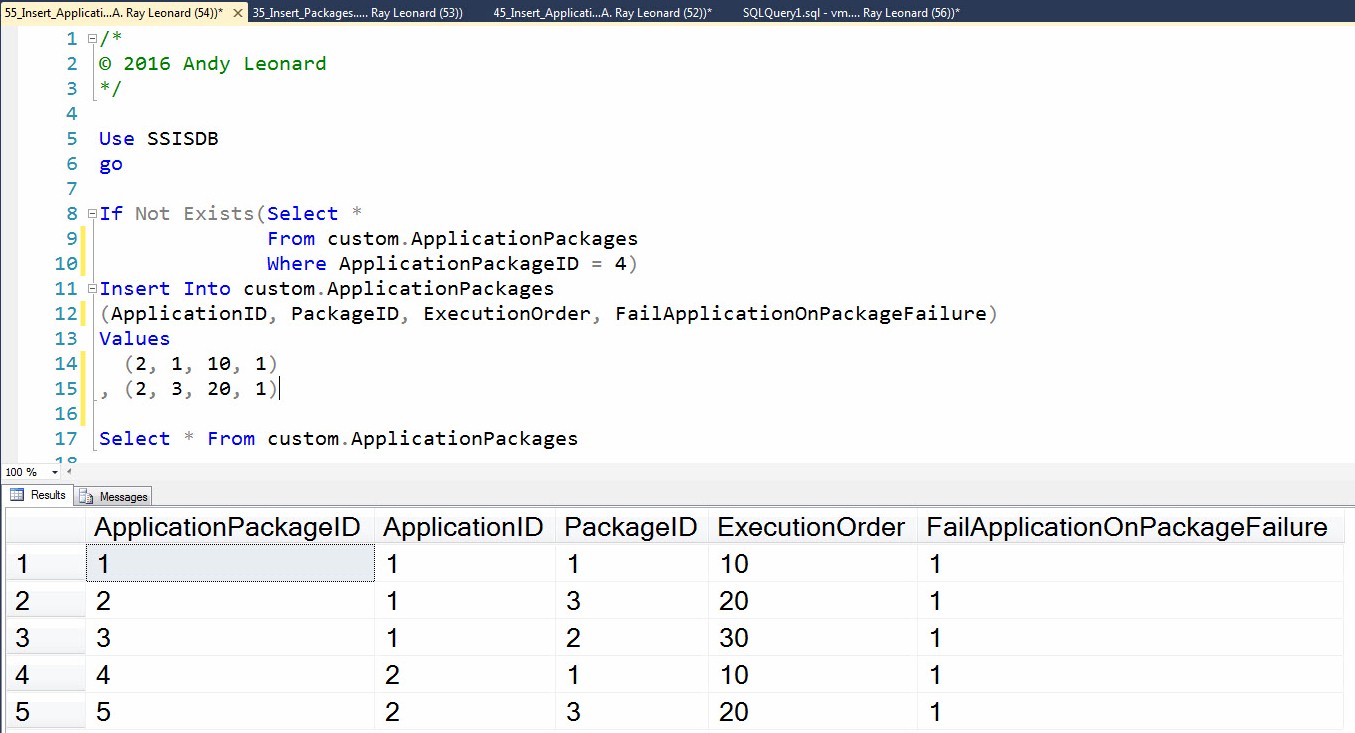
Do this.

## Create Application-Package Mappings

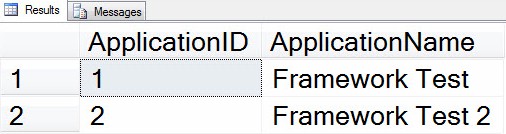
The next step in creating a new SSIS Application in the SSIS Framework Community Edition is to create Application-Package mappings.

In the SSIS Framework Community Edition, an SSIS Application executes a collection of SSIS packages stored in the SSIS Catalog in a sequential order. Open the 55\_Insert\_ApplicationPackages.sql T-SQL script and modify it as shown in the screenshot below. Note we add the FailApplicationOnPackageFailure bit to the list of fields to INSERT, and we include FailApplicationOnPackageFailure bit values of 1 for each row inserted in the list of VALUES.

After execution, the results should appear similar to those shown below:



Once you execute the modified script, you should see results akin to those shown below:

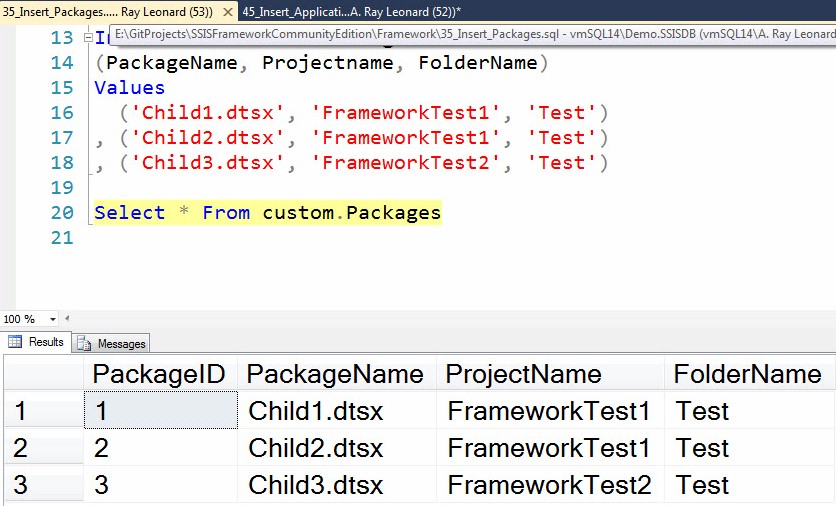


There are now two SSIS Applications listed in the custom.Applications table. Awesome. On to Packages. Remember the ApplicationID value for our new SSIS Application. We will need it in a later step.

## Add Package Metadata

The next step is to add Package metadata (if needed). In our case, we are going to create a new SSIS Application from existing SSIS packages, so we will not need to add any package metadata. We will, however, make use of the T-SQL script named “35\_Insert\_Packages.sql.”

Open the 35\_Insert\_Packages.sql T-SQL script. Highlight the T-SQL SELECT statement at the end of the script and execute the query. The SELECT statement should execute and return results similar to those shown below:



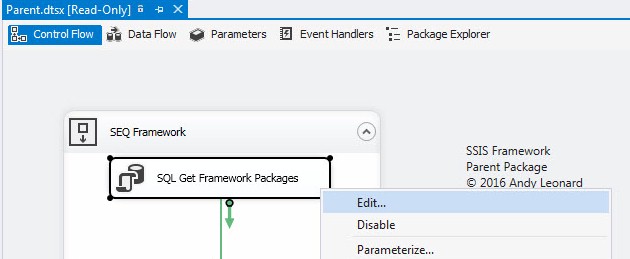
Remember the PackageID values for package we want to execute as part of our new SSIS Application. We will need them in a later step.

## Testing

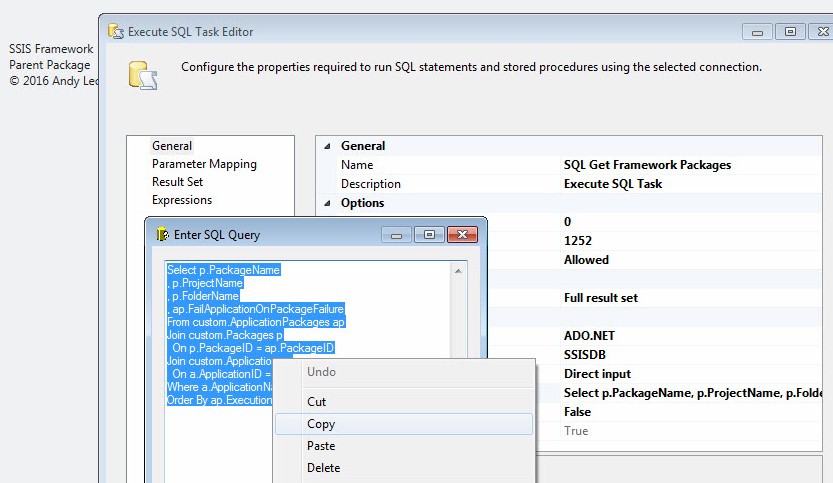
I create two tests for the functionality; a unit test and a functional / system test. The unit test checks the new SSIS Application’s data and the functional / system test checks the execution of the SSIS Framework Community Edition with the new SSIS Application.

### Unit Test

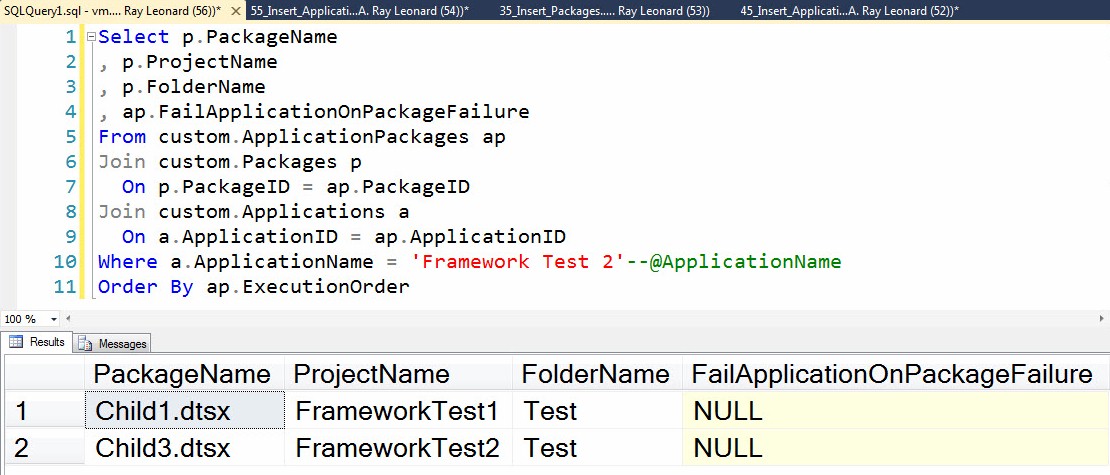
We are now ready to test to be sure we’ve entered the SSIS Application metadata correctly for use with SSIS Framework Community Edition. The easiest way to accomplish this is to use the query used by the Parent SSIS Package in the Framework SSIS Project (since this query will be used by the Framework). To access that query, open the “SSIS Framework Community Edition” SSIS solution. Expand the Framework project, and edit the Parent.dtsx SSIS package. Right-click the “SQL Get Framework Packages” Execute SQL Task and click Edit, as shown below:



Click the ellipsis beside the SQLStatement property and copy the T-SQL statement to the clipboard:



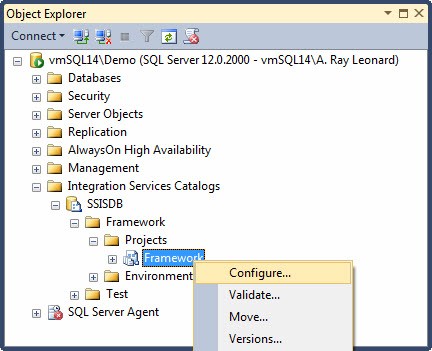
In SSMS, open a new query window and paste the clipboard contents into it. Change the WHERE clause so that the T-SQL statement returns only the rows for the “Framework Test 2” SSIS Application. Your results should appear similar to those shown below:



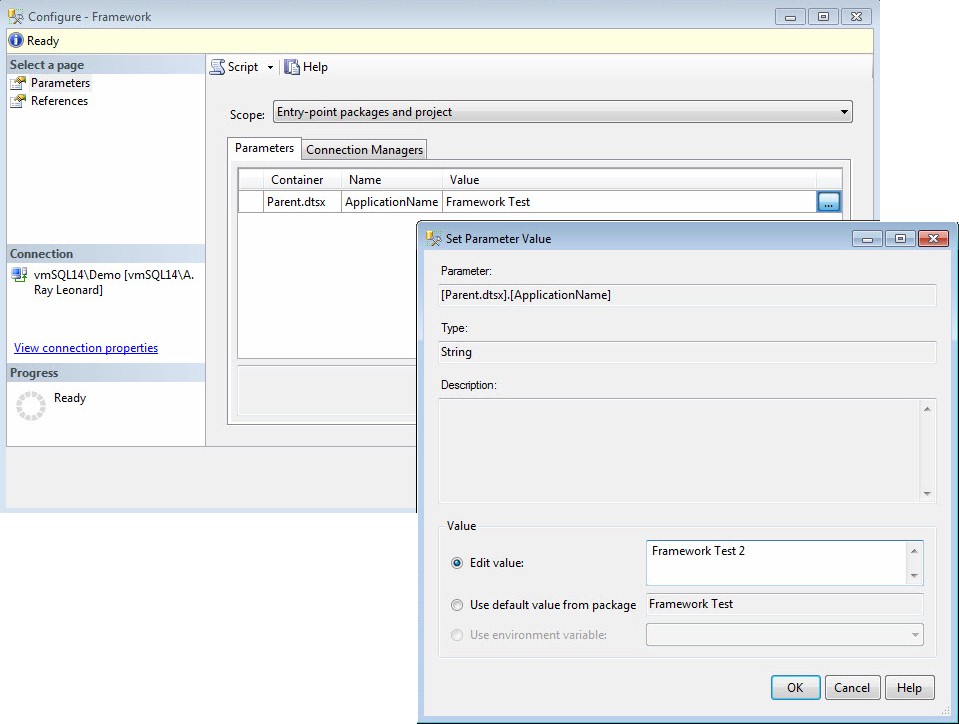
### Functional / System Test

The functional / system test will execute the Framework Test 2 SSIS Application in the SSIS Framework Community Edition.

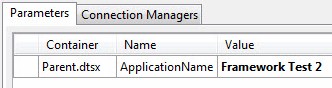
Open Object Explorer in SSMS, browse to the Integration Services Catalogs node, and expand until you reach the Framework SSIS project. Right-click the project and click Configure, as shown below:



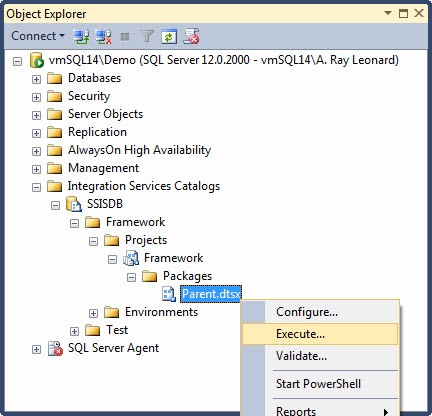
Click the ellipsis beside the ApplicationName parameter value and edit the value by selecting the “Edit value” option. Enter “Framework Test 2” into the “Edit value” textbox as shown below:



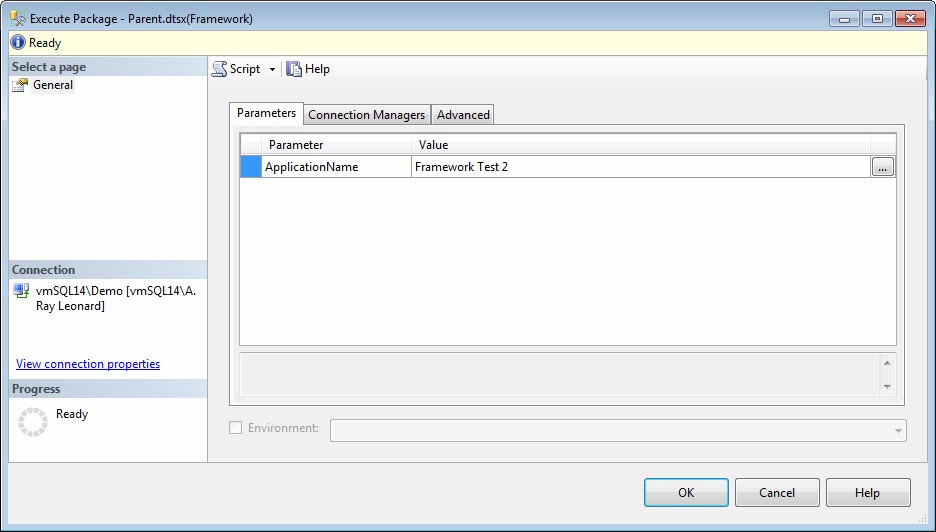
When you click the OK button, the ApplicationName parameter value will display “**Framework Test 2**” with a **bold** text decoration to indicate the value has been manually overridden in the SSIS Catalog configuration for the Framework SSIS Project and Parent.dtsx SSIS Package:



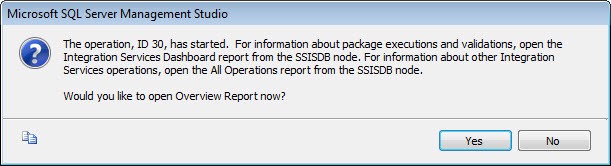
Click OK to return to SSMS’s Object Explorer. Expand the Framework project node and the Packages virtual node. Right-click Parent.dtsx and click Execute, as shown below:



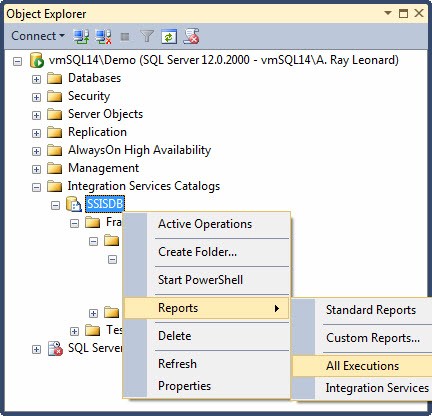
When the Execute Package dialog displays, click the OK button to execute Parent.dtsx:



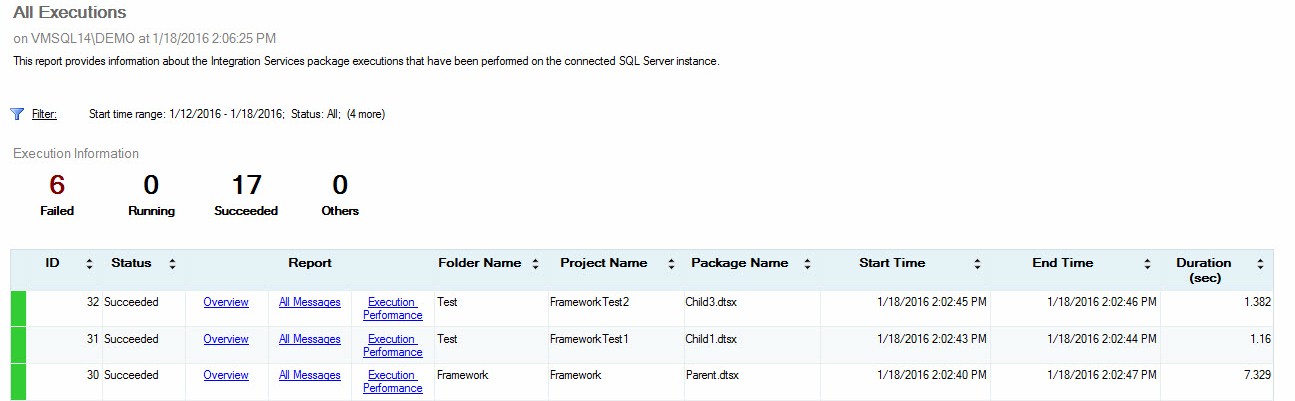
An SSMS dialog will display asking if you want to view the Overview report. Click No to continue:



Return to SSMS Object Explorer and right-click the SSISDB node, hover over Reports, hover over Standard Reports, and click All Executions, as shown below:



The All Executions report should appear similar to that shown below, which indicates the last three SSIS packages that executed were the Parent, Child1, and Child3 SSIS packages; which was how we configured the Framework Test 2 SSIS Application in the SSIS Framework Community Edition:



If All Executions appears similar to what is shown above, consider the functional / system test a success. If not, please review the test conditions and setup to see if you missed or misinterpreted a step.

# Executing an Application via Stored Procedure

You can execute an SSIS Framework Application by calling the execute\_catalog\_parent\_package stored procedure:

exec custom.execute\_catalog\_parent\_package @application\_name = 'Framework Test'

# Conclusion

This guide is intended to help you get started using the SSIS Framework Community Edition.

Please share questions and concerns with Andy Leonard at [andy.leonard@andyleonardconsulting.com](mailto:andy.leonard@andyleonardconsulting.com).

Enjoy!

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# Appendix A - GNU GENERAL PUBLIC LICENSE Version 3, 29 June 2007

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

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extent that warranties are provided), that licensees may convey the

work under this License, and how to view a copy of this License. If

the interface presents a list of user commands or options, such as a

menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work

for making modifications to it. "Object code" means any non-source

form of a work.

A "Standard Interface" means an interface that either is an official

standard defined by a recognized standards body, or, in the case of

interfaces specified for a particular programming language, one that

is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other

than the work as a whole, that (a) is included in the normal form of

packaging a Major Component, but which is not part of that Major

Component, and (b) serves only to enable use of the work with that

Major Component, or to implement a Standard Interface for which an

implementation is available to the public in source code form. A

"Major Component", in this context, means a major essential component

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(if any) on which the executable work runs, or a compiler used to

produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all

the source code needed to generate, install, and (for an executable

work) run the object code and to modify the work, including scripts to

control those activities. However, it does not include the work's

System Libraries, or general-purpose tools or generally available free

programs which are used unmodified in performing those activities but

which are not part of the work. For example, Corresponding Source

includes interface definition files associated with source files for

the work, and the source code for shared libraries and dynamically

linked subprograms that the work is specifically designed to require,

such as by intimate data communication or control flow between those

subprograms and other parts of the work.

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You may charge any price or no price for each copy that you convey,

and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to

produce it from the Program, in the form of source code under the

terms of section 4, provided that you also meet all of these conditions:

a) The work must carry prominent notices stating that you modified

it, and giving a relevant date.

b) The work must carry prominent notices stating that it is

released under this License and any conditions added under section

7. This requirement modifies the requirement in section 4 to

"keep intact all notices".

c) You must license the entire work, as a whole, under this

License to anyone who comes into possession of a copy. This

License will therefore apply, along with any applicable section 7

additional terms, to the whole of the work, and all its parts,

regardless of how they are packaged. This License gives no

permission to license the work in any other way, but it does not

invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display

Appropriate Legal Notices; however, if the Program has interactive

interfaces that do not display Appropriate Legal Notices, your

work need not make them do so.

A compilation of a covered work with other separate and independent

works, which are not by their nature extensions of the covered work,

and which are not combined with it such as to form a larger program,

in or on a volume of a storage or distribution medium, is called an

"aggregate" if the compilation and its resulting copyright are not

used to limit the access or legal rights of the compilation's users

beyond what the individual works permit. Inclusion of a covered work

in an aggregate does not cause this License to apply to the other

parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms

of sections 4 and 5, provided that you also convey the

machine-readable Corresponding Source under the terms of this License,

in one of these ways:

a) Convey the object code in, or embodied in, a physical product

(including a physical distribution medium), accompanied by the

Corresponding Source fixed on a durable physical medium

customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product

(including a physical distribution medium), accompanied by a

written offer, valid for at least three years and valid for as

long as you offer spare parts or customer support for that product

model, to give anyone who possesses the object code either (1) a

copy of the Corresponding Source for all the software in the

product that is covered by this License, on a durable physical

medium customarily used for software interchange, for a price no

more than your reasonable cost of physically performing this

conveying of source, or (2) access to copy the

Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the

written offer to provide the Corresponding Source. This

alternative is allowed only occasionally and noncommercially, and

only if you received the object code with such an offer, in accord

with subsection 6b.

d) Convey the object code by offering access from a designated

place (gratis or for a charge), and offer equivalent access to the

Corresponding Source in the same way through the same place at no

further charge. You need not require recipients to copy the

Corresponding Source along with the object code. If the place to

copy the object code is a network server, the Corresponding Source

may be on a different server (operated by you or a third party)

that supports equivalent copying facilities, provided you maintain

clear directions next to the object code saying where to find the

Corresponding Source. Regardless of what server hosts the

Corresponding Source, you remain obligated to ensure that it is

available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided

you inform other peers where the object code and Corresponding

Source of the work are being offered to the general public at no

charge under subsection 6d.

A separable portion of the object code, whose source code is excluded

from the Corresponding Source as a System Library, need not be

included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any

tangible personal property which is normally used for personal, family,

or household purposes, or (2) anything designed or sold for incorporation

into a dwelling. In determining whether a product is a consumer product,

doubtful cases shall be resolved in favor of coverage. For a particular

product received by a particular user, "normally used" refers to a

typical or common use of that class of product, regardless of the status

of the particular user or of the way in which the particular user

actually uses, or expects or is expected to use, the product. A product

is a consumer product regardless of whether the product has substantial

commercial, industrial or non-consumer uses, unless such uses represent

the only significant mode of use of the product.

"Installation Information" for a User Product means any methods,

procedures, authorization keys, or other information required to install

and execute modified versions of a covered work in that User Product from

a modified version of its Corresponding Source. The information must

suffice to ensure that the continued functioning of the modified object

code is in no case prevented or interfered with solely because

modification has been made.

If you convey an object code work under this section in, or with, or

specifically for use in, a User Product, and the conveying occurs as

part of a transaction in which the right of possession and use of the

User Product is transferred to the recipient in perpetuity or for a

fixed term (regardless of how the transaction is characterized), the

Corresponding Source conveyed under this section must be accompanied

by the Installation Information. But this requirement does not apply

if neither you nor any third party retains the ability to install

modified object code on the User Product (for example, the work has

been installed in ROM).

The requirement to provide Installation Information does not include a

requirement to continue to provide support service, warranty, or updates

for a work that has been modified or installed by the recipient, or for

the User Product in which it has been modified or installed. Access to a

network may be denied when the modification itself materially and

adversely affects the operation of the network or violates the rules and

protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided,

in accord with this section must be in a format that is publicly

documented (and with an implementation available to the public in

source code form), and must require no special password or key for

unpacking, reading or copying.

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If you add terms to a covered work in accord with this section, you

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