

GENAPP 5.1 Business Rules

# GENAPP Extension for Business Rules

---

## Overview

This general insurance application (GENAPP) Extension for Business Rules demonstrates how you can integrate CICS® applications with business rule technology to create agile and flexible applications.

The core general insurance application (GENAPP) has been updated so that calls to the IBM Decision Server for z/OS, V8.0.1 (a product within the IBM® Operational Decision Manager for z/OS®, V8.0.1 offering) or IBM Business Rules for z/OS, V8.0.1, can optionally be implemented. This extension contains the rule projects that are imported and deployed to the zRule Execution Server (zRES) for z/OS, running under CICS Transaction Server, as a CICS Java Virtual Machine (JVM) deployment option. This document outlines the changes required to implement this extension, and therefore externalise new business rule functionality.

New assets that have been implemented in the core insurance application (GENAPP) include:

GENAPP.SOURCE(LGAPOL01)	Updated policy addition program
GENAPP.SOURCE(LGAPBR01)	New business rule processing program
GENAPP.SOURCE(LGCMARER)	New copybook for business rule processing
GENAPP.SOURCE(LINKHBRP)	New link parameters for program LGAPBR01
GENAPP.CNTL(COBOLBR)	Generic JCL to compile and link program LGAPBR01

Additionally, this extension contains business rule development projects that comprise the rule application:

genapp  
GenAppDemo  
GenAppDemoApp

This extension relates to the general insurance application (GENAPP) endowment insurance policy addition function. By default, when the user enters the SSP2 transaction (endowment insurance policy processing) and adds a policy, the fund name that was input is returned in upper case, with a new policy addition.

However, once this extension is implemented, on executing the SSP2 transaction again -- assuming the criteria of the validity rule is met (term length is greater than ten years) -- a fund name will be dynamically allocated based on the contents of a Decision Table, as defined in the Fund Selection rule.

By following the instructions in this document, the following is achieved:

- Business rule projects are imported into the Rule Designer
- The RuleApp containing the two rules is deployed to the zRule Execution Server
- Successful deployment of the RuleApp is confirmed by viewing the Rule Execution Server console

- The endowment insurance policy addition program (LGAPOL01) is amended to call the business rule program (LGAPBR01)
- The endowment insurance policy addition program (LGAPOL01) is recompiled and loaded in CICS
- The GENAPP endowment insurance policy addition transaction (SSP2) is rerun to execute the application and associated business rules.

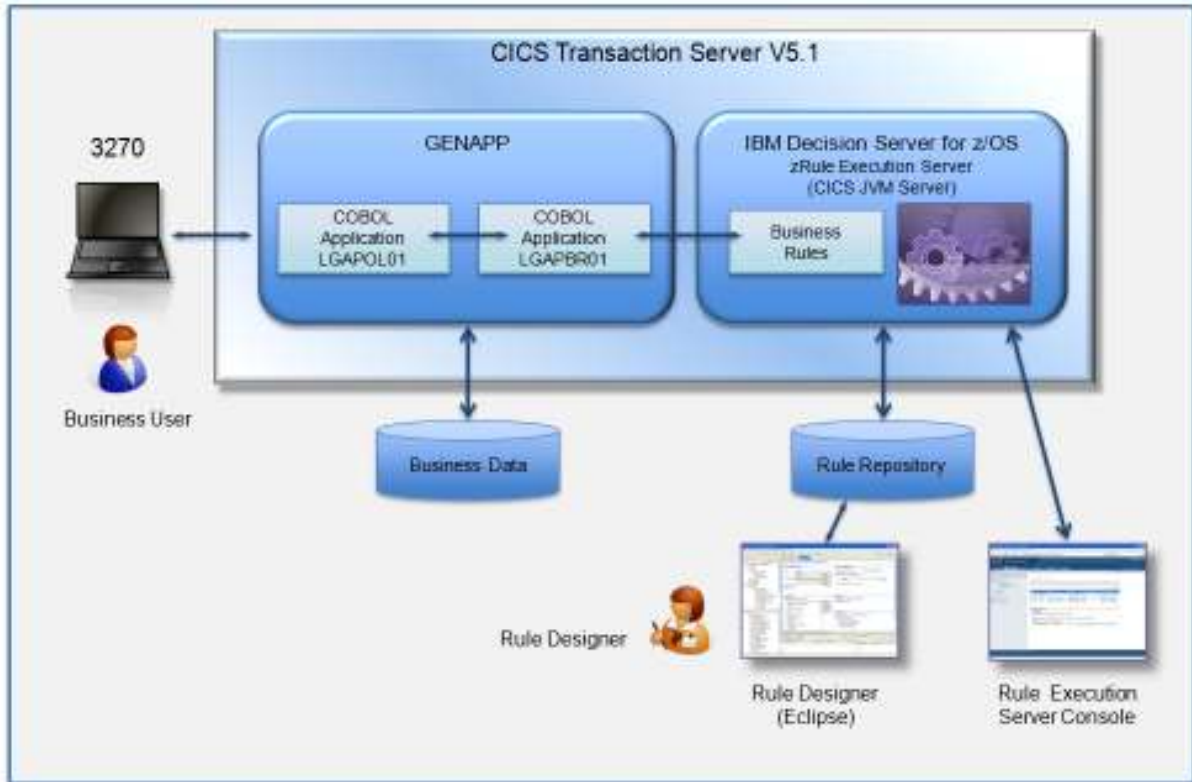


Figure 1. Application Overview

Two business rules are provided in this extension as part of a RuleFlow:

- A Validity rule, which checks the value of the Term of the endowment insurance policy being added
- Depending on the value of the Term entered, a Fund Selection rule, which comprises a Decision Table, is processed. Specified values for the Fund Name are returned depending on the Sum Assured value that has been entered.

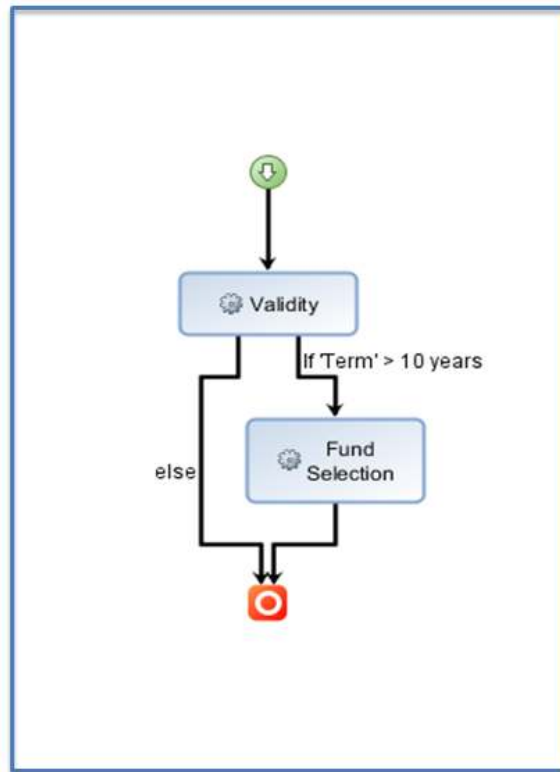


Figure 2. Business Rule Structure

**Related information:**

[General insurance application \(GENAPP\) for IBM CICS Transaction Server](#)  
[IBM Operational Decision Manager for z/OS](#)

# Business Rule enablement

## Overview

Business Rules can be used with CICS Transaction Server V5.1 to facilitate greater agility.

Smarter business outcomes require the ability to quickly adapt to change. Organisations are under continual pressure to adapt the business logic in the applications. Business rules, which are fundamentally pieces of business design logic, are present at the core of most CICS Transaction Server applications. As an example, business rules may contain logic for processing the allocation of a financial fund name, or returning a credit score.

The integration of CICS Transaction Server with IBM Business Rules technology can help address the agility needed within an organisation's CICS application portfolio, with a number of benefits:

- Organisations can extend the life -- and derive more value -- from existing investments they've made in their CICS application portfolio, and make those applications more responsive, flexible and efficient.
- The time taken to process and deploy CICS application changes can be dramatically reduced. And, since rules are stored within a repository, they are more visible and can be reused -- within a governance framework.

This extension to GENAPP demonstrates how the integration of Business Rules technology -- via the IBM Decision Server for z/OS, a product within the IBM Operational Decision Manager for z/OS software offering -- with CICS Transaction Server, can be achieved to realise these benefits.

Using additional capability, such as the IBM Decision Center for z/OS®, another product within the IBM Operational Decision Manager for z/OS, a user could change the fund name dynamically, without requiring change to the underlying general insurance application (GENAPP) CICS-based application. This facilitates a more flexible and responsive model for creating and maintaining CICS applications.

## Prerequisites

There are a number of actions that must be completed before the GENAPP Extension for Business Rules can be executed:

- IBM® Operational Decision Manager for z/OS®, V8.0.1, includes a separately orderable product, IBM Decision Server for z/OS, V8.0.1, that provides a business rule execution environment. A separate product offering, IBM Business Rules for z/OS, V8.0.1, provides the same business rule execution capabilities that are packaged within IBM Decision Server for z/OS, V8.0.1. To execute this GENAPP Extension for Business Rules, the zRule Execution Server (zRES) component, available with IBM Decision Server for z/OS , V8.0.1 (or later) or IBM Business Rules for z/OS, V8.0.1 (or later) is required to be installed, configured and started as a deployment option hosted within a CICS® 4.x or CICS 5.x region. See [http://pic.dhe.ibm.com/infocenter/dmanager/v8r0m1/index.jsp?topic=%2Fcom.ibm.wodm.family.config.zos%2Ftopics%2Ftsk\\_dsz\\_config\\_zres.html](http://pic.dhe.ibm.com/infocenter/dmanager/v8r0m1/index.jsp?topic=%2Fcom.ibm.wodm.family.config.zos%2Ftopics%2Ftsk_dsz_config_zres.html) .
- The Rule Execution Server console, available with available with IBM Decision Server for z/OS, V8.0.1 (or later) or IBM Business Rules for z/OS, V8.0.1 (or later), is required to be configured and started. See [http://pic.dhe.ibm.com/infocenter/dmanager/v8r0m1/index.jsp?topic=%2Fcom.ibm.wodm.zos.dserver.zres.admin%2Ftopics%2Ftpc\\_zres\\_admin\\_and\\_monitor.html](http://pic.dhe.ibm.com/infocenter/dmanager/v8r0m1/index.jsp?topic=%2Fcom.ibm.wodm.zos.dserver.zres.admin%2Ftopics%2Ftpc_zres_admin_and_monitor.html) .
- The Eclipse-based Rule Designer component, available with IBM Decision Server for z/OS, V8.0.1 (or later) or IBM Business Rules for z/OS, V8.0.1 (or later) is required to import the business rules supplied with the GENAPP Business Rules Extension and deploy them to the zRule Execution Server (zRES). See [http://pic.dhe.ibm.com/infocenter/dmanager/v8r0m1/index.jsp?topic=%2Fcom.ibm.wodm.zos.dserver.zres%2Ftopics%2Fcon\\_zres\\_deploy\\_ruleapps\\_xoms.html](http://pic.dhe.ibm.com/infocenter/dmanager/v8r0m1/index.jsp?topic=%2Fcom.ibm.wodm.zos.dserver.zres%2Ftopics%2Fcon_zres_deploy_ruleapps_xoms.html) .
- A connection between CICS Explorer and your CICS systems must be established by providing details about the system connection, its location, and authentication requirements. By default, CICS Explorer attempts to connect by using the SSL protocol. If the SSL connection is not successful, the connection is attempted without SSL. For more information about configuring z/OS and CICS SM connections, see [http://pic.dhe.ibm.com/infocenter/cicsts/v5r1/topic/com.ibm.cics.ts.installation.doc/topics/explorer\\_configure\\_connection.html](http://pic.dhe.ibm.com/infocenter/cicsts/v5r1/topic/com.ibm.cics.ts.installation.doc/topics/explorer_configure_connection.html) .
- It is recommended that the base general insurance application (GENAPP) is configured prior to the installation and configuration of the Extension for Business Rules. Specifically, the endowment insurance policy addition process should be successfully tested via CICS transaction SSP2. See <http://www-01.ibm.com/support/docview.wss?uid=swg24031760> .

# Importing the Rule projects

## Procedure

1. Start Rule Designer with an appropriate workspace.
2. In the `Rule` perspective, individually import the following projects from the archive into the required workspace:
  - `genapp`
  - `GenAppDemo`
  - `GenAppDemoApp`

# Deploying the RuleApp

## Procedure

Deploy the RuleApp by executing the following steps:

1. In the `Rule Explorer` view of the `Rule` perspective, expand the `GenAppDemoApp` project, and right click on `archive.xml`.
2. Select **RuleApp > Deploy**.
3. Click **Next** to select the default `Increment RuleApp major version` option
4. Specify the `URL` of the appropriate `zRule Execution Server` for `z/OS`, and enter the appropriate security credentials.
5. Click **Finish**.
6. Confirm the RuleApp has been successfully deployed by checking the Explorer view within the Rule Execution Server console

For more information about this step, see

[http://pic.dhe.ibm.com/infocenter/dmanager/v8r0m1/index.jsp?topic=%2Fcom.ibm.wodm.zos.dserver.zres%2Ftopics%2Fcon\\_zres\\_deploy\\_ruleapps\\_xoms.html](http://pic.dhe.ibm.com/infocenter/dmanager/v8r0m1/index.jsp?topic=%2Fcom.ibm.wodm.zos.dserver.zres%2Ftopics%2Fcon_zres_deploy_ruleapps_xoms.html)



# Configuring the GENAPP COBOL programs

## Procedure

Configure the supplied GENAPP COBOL programs to execute business rule processing:

1. Edit GENAPP.SOURCE (LGAPOL01), search for the line `MOVE 'Y' TO BUSINESS-RULES` and uncomment it so this statement is now executed.

```
*-----*
*   Perform Business Rule processing via ODM   *
*-----*
*   If an Endowment policy is being added, and if Business
*   Rule processing is required, then call the Business Rule
*   program.
*   Note: uncomment the following 'MOVE' statement to apply
*         Business Rule processing (default=no)
*         MOVE 'Y' TO BUSINESS-RULES
```

2. Edit GENAPP.CNTL (@COBOL) to specify compile for LGAPOL01 only, submit the job and check for successful completion. You may choose not to save the amended @COBOL member following job submission so that the original content is maintained.
3. Using CICS Explorer, execute the **Operations > Programs > LGAPOL01 > Phase In** operation to newcopy the updated LGAPOL01 program.
4. Edit GENAPP.CNTL (@COBOLBR) and replace the two instances of the `[ [ODM] ]` tag with the correct ODM datasets qualifiers, e.g. `SYS2.ODM801.TLIB`. Submit the job and check for successful completion.

```
//COBL      EXEC PGM=IGYCRCTL,
//  PARM='NODYNAM,LIB,RENT,APOST,LIB,CICS(''SP''),SIZE(4000K) '
//STEPLIB   DD DSN=PP.COBOL390.V420.SIGYCOMP,DISP=SHR
//          DD DSN=CTS510.CICS680.SDFHLOAD,DISP=SHR
//SYSLIB    DD DSN=CTS510.CICS680.SDFHCOB,DISP=SHR
//          DD DSN=[ [ODM] ].SHBRCOBC,DISP=SHR
//          DD DSN=CTS510.CICS680.SDFHMAC,DISP=SHR
//          DD DSN=CTS510.CICS680.SDFHSAMP,DISP=SHR
```

# Running the updated GENAPP application

## Procedure

To execute the updated GENAPP application:

1. Run transaction `SSP2` in the 3270 terminal.
2. Enter input for `Term` greater than 10, and a `Sum Assured` value of 40,000.
3. Check the returned values, noting that the `Fund Name` has been dynamically allocated, as a result of the successful invocation of the business rules.

## Notices

This information was developed for products and services offered in the U.S.A. IBM® may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing  
IBM Corporation  
North Castle Drive  
Armonk, NY 10504-1785  
U.S.A.

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:  
IBM World Trade Asia Corporation  
Licensing 2-31 Roppongi 3-chome, Minato-ku  
Tokyo 106-0032, Japan

**The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION**

PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM Corporation  
Software Interoperability Coordinator, Department 49XA  
3605 Highway 52 N  
Rochester, MN 55901  
U.S.A.

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this information and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement, or any equivalent agreement between us.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

#### COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs.

If you are viewing this information softcopy, the photographs and color illustrations may not appear.

## Trademarks

IBM, the IBM logo, [ibm.com](http://www.ibm.com)®, are trademarks of IBM Corporation, registered in many jurisdictions worldwide. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" [www.ibm.com/legal/copytrade.shtml](http://www.ibm.com/legal/copytrade.shtml). Other product and service names might be trademarks of IBM or other companies.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Microsoft and Windows are trademarks of Microsoft Corporation in the United States, other countries, or both.

Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.

This product includes software developed by the Eclipse Project (<http://www.eclipse.org/>).

Java and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates.