

# **MQSeries Integrator – CICS Client Plug-In**

## **Version 1.0**

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**Take Note!**

Before using this report be sure to read the general information under "Notices".

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This edition applies to Version 1.0 of *MQSeries Integrator – CICS Client Plug-In* and to all subsequent releases and modifications unless otherwise indicated in new editions.

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## Table of Contents

Notices .....	iv
Trademarks and service marks .....	iv
Summary of Amendments .....	v
Preface.....	vi
Bibliography .....	vii
CICSClient Node.....	1
Overview .....	1
Installing the CICSClient node.....	2
SupportPac contents .....	2
Prerequisites .....	2
Supported Platforms.....	3
Installing the CICSClient node on broker system .....	3
Integrating the CICSClient node into the Windows Control Center .....	3
Defining the node to the configuration repository .....	3
Using the CICSClient node .....	5
Description .....	5
CICSClient node terminals .....	5
CICSClient node properties .....	5
Compiling the CICSClient node .....	6
Windows NT .....	6
Example using the CICSClient node .....	7

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## Summary of Amendments

Date	Changes
3 <sup>rd</sup> July 2001	Initial release

## Preface

This SupportPac provides interaction between the MQSeries Integrator V2 product and a CICS Server, which can be reached by the CICS Universal Client. Arbitrary CICS applications can be invoked and supplied with CICS Commareas generated within the message flow. The returned Commarea is inserted into the new message flow.

## Bibliography

- *IBM MQSeries Integrator for Windows NT Version 2 Installation Guide*, IBM Corporation. SC34-5600.
- *IBM MQSeries Integrator for Sun Solaris Version 2 Installation Guide*, IBM Corporation. SC34-5842
- *IBM MQSeries Integrator for AIX Version 2 Installation Guide*, IBM Corporation. SC34-5841
- *IBM MQSeries Integrator Version 2 Using the Control Center*, IBM Corporation. SC34-5602
- *IBM MQSeries Integrator Version 2 Programming Guide*, IBM Corporation. SC34-5603
- *CICS Clients Administration*
  - SC33-1792 for CICS Clients Version 2
  - SC34-5450 for CICS Universal Client for OS/2 ® Version 3
  - SC34-5449 for CICS Universal Client for Windows ™ Version 3
  - SC34-5448 for CICS Universal Client for AIX ® Version 3
  - SC34-5451 for CICS Universal Client for Solaris Version 3
- *CICS Family: Client/Server Programming*, IBM Corporation. SC33-1435-04

## **CICSClient Node**

### ***Overview***

MQSeries Integrator is designed to simplify data conversion and message routing of enterprise application data. In many organizations, IBM's CICS transaction processing system forms a key component of the solution. The ability to execute a CICS transaction and supply input data and receive result responses can be a critical component in a business solution.

This document describes the CICSClient extension node for the MQSI V2 product. By employing this node, communication with a CICS Server may be achieved within an MQSI V2 message flow. Data may be passed to the CICS Server and a named application be executed. Results from that application may be returned to the message flow and, if desired, further acted upon.

This node provides an interface to the IBM CICS Universal Client. This is a freely distributed software component, which provides programmatic access to a CICS Server.

## Installing the CICSClient node

### ***SupportPac contents***

The supplied zip file should be unzipped in a temporary directory. The following files and sub-directories will be created:

```

/source
    NodeUtils.h
    NodeUtils.c
    CICSClient.cpp
    StdAfx.cpp
    StdAfx.h
    CICSClient.dsp
    CICSClient.dsw
/source/NT_msg
    build.bat
    cicsclient_msg.dll
    cicsclient_msg.h
    cicsclient_msg.rc
    cicsclient_msg.res
    cicsclient_msg.txt
/NT
    CICSClient
    CICSClient.gif
    CICSClient.lil
    CICSClient.properties
    CICSClient.wdp
    CICSClient30.gif
    CICSClient42.gif
    CICSClient58.gif
    CICSClient84.gif
    MessageProcessingNodeType_CICSClient.htm
license2.txt
ia74.pdf

```

### ***Prerequisites***

This SupportPac provides a plug-in node to be used with the IBM MQSeries Integrator Version 2.0.1 and above. This SupportPac requires the IBM CICS Universal Client as a prerequisite to operation. The IBM CICS Universal Client may be downloaded and installed from the IBM website at the following URL:

<http://www.ibm.com/software/cics/platforms/clients/ctg31pdt.htm>

If any changes are to be made to the plug-in node, an appropriate C++ compiler is required.

## Supported Platforms

This SupportPac has been developed and tested in a Microsoft Windows NT environment.

## Installing the CICSClient node on broker system

The plug-in 'lil' file can be installed by copying or moving the appropriate file to the following directory:

- <mqs\_i\_root>\bin (Windows)

You must stop and restart the broker to enable it to detect the existence of the new 'lil'.

## Integrating the CICSClient node into the Windows Control Center

The necessary files for integrating the plug-in into the Windows Control Center are provided in the /NT directory.

Use the following table to copy the files to their correct location. These locations should already exist providing you have deployed at least one message flow. Append your <MQSI V2 root install path> to the **Copy to location** value.

Use the following to replace the placeholders:

<hostname> - TCP/IP hostname

<CM QMName> - Configuration Manager's queue manager name

Filename	Copy to location
CICSClient	\Tool\repository\private\<hostname>\<CM QMName>\MessageProcessingNodeType
CICSClient.wdp	\Tool\repository\private\<hostname>\<CM QMName>\MessageProcessingNodeType
CICSClient.gif	\Tool\images
CICSClient30.gif	\Tool\images
CICSClient42.gif	\Tool\images
CICSClient58.gif	\Tool\images
CICSClient84.gif	\Tool\images
CICSClient.properties	\Tool\com\isv
MessageProcessingNode Type_CICSClient.htm	\Tool\help\com\isv

## Defining the node to the configuration repository

When you have installed the files in the appropriate directories, as described in the previous section, you must make these definitions available to the Control Center.

1. Start the Control Center. The user ID you are using must be a member of the MQSeries Integrator group **mqbrdevt**. You are recommended to use the superuser **IBMMQS/2** to complete this task<sup>1</sup>. This causes your new node to be locked under the same user ID as all the supplied IBM primitive nodes. If you do not use this user ID, the definition files in the configuration repository might be accidentally locked, and therefore open to unauthorized update.

<sup>1</sup> You must take care if you change logon IDs to complete this task. Changing logon IDs can effect the operation of the Configuration Manager's queue manager if it is on this system, but not running as a Windows NT service. See the *MQSeries Integrator Administration Guide* for more information about queue manager operation (Chapter 2) and the superuser **IBMMQS/2** (Chapter 4).

2. Select the Message Flows view.
3. Select an existing Message Flow Category, or create a new one.
4. Right-click the selected category, and select *Add->Message Flow*.

A list box is displayed showing all existing IBM-supplied primitive nodes and any defined message flows you have installed following the instructions provided.

5. Select the message flow (the node).

This node now appears within the message flow category you selected in the tree view in the left-hand pane.

6. Select your new node, and right-click. Select *Check In*.
7. Right-click again, and select Lock. Then right-click again and select Check In for a second time. After this check, the interface and \*.**wdp** definition files disappear from the local directory and go into the shared repository, where they are available to all users of the Control Center. However, user can only use this new node if they have installed the additional files (icons, properties files, and so on) on their own system.

## Using the CICSClient node

### *Description*

#### *CICSClient node terminals*

Terminal	Description
In	The input terminal that accepts a message for processing by the node
Out	The output terminal that outputs the new message. The new message's content will be based upon the returned CICS Commarea from the execution of the application on the CICS Server.
Failure	The output terminal to which the original incoming message is routed if failure is detected during processing the message.

#### *CICSClient node properties*

Attribute	Description
Name of CICS Region	The name of the CICS Region (Server) on which the program is defined.
Name of CICS Program	The name of the CICS program to be executed.
CICS Userid	Optional CICS userid under which the application will be executed.
Userid's Password	Optional password for the CICS userid. The password must be supplied if a userid is supplied.
Length of Commarea	Optional forced commarea size. If omitted or set to a value of 0, the size of the incoming message tree message data will be used.
Remove MQMD	Should any MQMD headers that may exist in the incoming message be removed before building the Commarea data to be used as input to the CICS program?

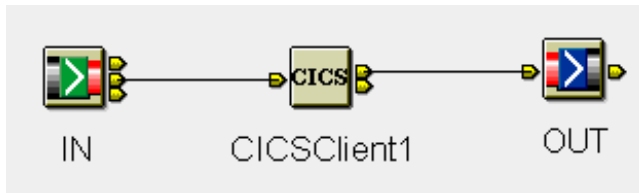
## Compiling the CICSClient node

### *Windows NT*

In the <SupportPac>/source directory is a complete Microsoft Visual Studio V6 project ready to run to be used to rebuild the CICSClient custom node.

## Example using the CICSClient node

The following sample illustrates the use of a CICSClient node within an MQSI V2 message flow. In the example, a message will be retrieved from an MQSeries queue called 'IN' and sent to the CICSClient node. This node will execute a program on a CICS Server and the resulting response will be deposited in the MQSeries queue called 'OUT'.



The CICSClient node has been configured with the following properties:

CICSClient1	
Description	
<b>Name of CICS Region:</b>	CICSREG1
<b>Name of CICS Program:</b>	BACKEND
CICS Userid:	
Userid's password:	
Length of commarea:	
Remove MQMD:	<input checked="" type="checkbox"/>
<b>MessageProcessingNodeType</b>	CICSClient

OK Cancel Apply Help

This instructs a CICS program called 'BACKEND' to be executed on the CICS Server called 'CICSREG1'. The data passed to the program via the CICS Commarea will be exactly the data found within the incoming message that triggered the message flow.

The following sample CICS application written in 'C' may be used to test function. It converts any supplied Commarea value into character data from 0..9 based on position within the data. For example, an input of 'Hello World!' will result in a Commarea of '0123456789012'

```
main()
{
    char *commarea;
    int i;
    EXEC CICS ADDRESS COMMAREA(commarea);
    EXEC CICS ADDRESS EIB(dfheiptr);
    for (i=0; i<dfheiptr->eibcalen; i++)
    {
        commarea[i] = '0' + i%10;
    }
    EXEC CICS RETURN;
}
```

The target CICS region must be configured to the IBM CICS Universal Client. This is covered in the Administration manual for the IBM CICS Universal Client. Prior to testing the CICSClient node within an MQSI V2 message flow, connectivity to the target CICS Server should be verified using the IBM supplied sample CICS applications.

If results are not as expected when running the message flow, check the MQSI V2 message log (the Event Viewer – Application section, on NT).

**End of Document**