

Client and Server Examples for z/OS CICS

This chapter describes the examples provided for the COBOL Wrapper for z/OS CICS. All examples here can be found in the EntireX directory *examples/RPC* under UNIX and Windows. They are also available for z/OS, if this is installed. See *Extract the EntireX RPC Examples from their Container Data Set*. This chapter covers the following topics:

- Basic RPC Client Examples - CALC, SQUARE
 - Basic RPC Server Examples - CALC, SQUARE
 - Reliable RPC Client Examples - SENDMAIL
 - Reliable RPC Server Example - SENDMAIL
 - Advanced CICS Channel Container RPC Server Example - DFHCON
 - Advanced CICS Large Buffer RPC Server Example - DFHLBUF
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Basic RPC Client Examples - CALC, SQUARE

This section covers the following examples:

- CALC Client using DFHCOMMAREA
- CALC Client using Call Interface
- SQUARE Client using DFHCOMMAREA
- SQUARE Client using Call Interface

CALC Client using DFHCOMMAREA

For CICS under operating system z/OS, the following CALC client is implemented with interface type "CICS with DFHCOMMAREA calling convention". See *Client Interface Types* for more information.

Name	Type	Data Set	Description	Notes
CALCIDFH	CICS CSD	EXP970.DCCO	CSD Definition for RPC client CALC1CLT.	
CALCIIGY	JCL	EXP970.DCCO	Job (JCL) to build the RPC client CALC1CLT.	2
CALC1MAP	CICS Map	EXP970.DCCO	CICS Map definition for RPC client and CALC1CLT.	
CALC1	COBOL source code	EXP970.DCCO	Client interface object for IDL program CALC1, alias of CALC.	1
CALC1CLT	COBOL source code	EXP970.DCCO	An RPC client application calling the remote procedure (RPC service) CALC.	3
CALC1MAP	COBOL copybook	EXP970.DICO	Description of input and output fields of map CALC1MAP.	
CALC1	COBOL copybook	EXP970.DICO	Client interface object copybook for IDL program CALC1, alias of CALC.	1

Notes:

1. Under z/OS, client interface objects are delivered with the installation; under UNIX and Windows, generate these objects with the EntireX Workbench.
2. Adapt the JCL to your needs.
3. Application
 1. built according to the client-side build instructions, see *Using the COBOL Wrapper for CICS with DFHCOMMAREA Calling Convention (z/OS and z/VSE)*.
 2. associated with IDL file *exampleWithPgmAlias.idl*, delivered under UNIX and Windows in EntireX directory *examples/RPC/basic/example/CobolClient/zosCICS/DFHCOMMAREA*.
 3. client interface object name CALC1 different from remote procedure name CALC (RPC service).
 4. CALC1CLT and client interface objects CALC1 installed as separate CICS programs.

For more information, refer to the readme file in EntireX directory *examples/RPC/basic/example/CobolClient/zosCICS/DFHCOMMAREA* under UNIX or Windows.

CALC Client using Call Interface

For CICS under operating system z/OS, the following CALC client is implemented with interface type "CICS with standard linkage calling convention". See *Client Interface Types* for more information.

Name	Type	Data Set	Description	Notes
CALC	COBOL source code	EXP970.DCCO	Client interface object for IDL program CALC.	1
CALCCLT	COBOL source code	EXP970.DCCO	An RPC client application calling the remote procedure (RPC service) CALC.	2
CALCDFH	CICS CSD	EXP970.DCCO	CSD Definition for RPC client CALCCLT.	
CALCIGY	JCL	EXP970.DCCO	Job (JCL) to build the RPC client CALCCLT.	3
CALCMAP	CICS Map	EXP970.DCCO	CICS Map definition for RPC client CALCCLT.	
CALC	COBOL copybook	EXP970.DICO	Client interface object copybook for IDL program CALC.	1
CALCMAP	COBOL copybook	EXP970.DICO	Description of input and output fields of map CALCMAP.	

Notes:

1. Under z/OS, client interface objects are delivered with the installation; under UNIX and Windows, generate these objects with the EntireX Workbench.
2. Application
 1. built according to the client-side build instructions, see *Using the COBOL Wrapper for CICS with Call Interfaces (z/OS and z/VSE)*
 2. associated with IDL file *example.idl*
 3. CALCCLT uses CICS Map definition CALCMAP
 4. CALCCLT and client interface object CALC are linked together
 5. CALCCLT installed as single CICS program
3. Adapt the JCL to your needs.

For more information, refer to the readme file in EntireX directory *examples/RPC/basic/example/CobolClient/zosCICS/Callinterface* under UNIX or Windows.

SQUARE Client using DFHCOMMAREA

For CICS on operating system z/OS, the following SQUARE client is implemented with interface type "CICS with DFHCOMMAREA calling convention". See *Client Interface Types* for more information.

Name	Type	Data Set	Description	Notes
SQRE1DFH	CICS CSD	EXP970.DCCO	CSD Definition for RPC client SQRE1CLT.	
SQREI1GY	JCL	EXP970.DCCO	Job (JCL) to build the RPC client SQRE1CLT.	2
SQRE1MAP	CICS Map	EXP970.DCCO	CICS Map definition for RPC clients SQRE1CLT.	
SQRE1	COBOL source code	EXP970.DCCO	Client interface object for IDL program SQRE1, alias of SQUARE.	1
SQRE1CLT	COBOL source code	EXP970.DCCO	An RPC client application calling the remote procedure (RPC service) SQUARE.	3
SQRE1MAP	COBOL copybook	EXP970.DICO	Description of input and output fields of map SQRE1MAP.	
SQRE1	COBOL copybook	EXP970.DICO	Client interface object copybook for IDL program SQRE1, alias of SQUARE.	1

Notes:

1. Under z/OS, client interface objects are delivered with the installation; under UNIX and Windows, generate these objects with the EntireX Workbench.
2. Adapt the JCL to your needs.
3. Application
 1. built according to the client-side build instructions, see *Using the COBOL Wrapper for CICS with DFHCOMMAREA Calling Convention (z/OS and z/VSE)*.
 2. associated with IDL *exampleWithPgmAlias.idl*.
 3. client interface object name SQRE1 different from remote procedure name SQUARE (RPC service).
 4. SQRE1CLT and client interface object SQRE1 installed as separate CICS programs.

For more information, refer to the readme file in EntireX directory *examples/RPC/basic/example/CobolClient/zosCICS/DFHCOMMAREA* under UNIX or Windows.

SQUARE Client using Call Interface

For CICS on operating system z/OS, the following SQUARE client is implemented with interface type "CICS with standard linkage calling convention". See *Client Interface Types* for more information.

Name	Type	Data Set	Description	Notes
SQRECLT	COBOL source code	EXP970.DCCO	An RPC client application calling the remote procedure (RPC service) SQUARE.	2
SQREDFH	CICS CSD	EXP970.DCCO	CSD Definition for RPC client SQRECLT.	
SQREIGY	JCL	EXP970.DCCO	Job (JCL) to build the RPC client SQRECLT.	3
SQREMAP	CICS Map	EXP970.DCCO	CICS Map definition for RPC client SQRECLT.	
SQUARE	COBOL source code	EXP970.DCCO	Client interface object for IDL program SQUARE.	1
SQREMAP	COBOL copybook	EXP970.DICO	Description of input and output fields of map SQREMAP.	
SQUARE	COBOL copybook	EXP970.DICO	Client interface object copybook for IDL program SQUARE.	1

Notes:

1. Under z/OS, client interface objects are delivered with the installation; under UNIX and Windows, generate these objects with the EntireX Workbench.
2. Application
 1. built according to the client-side build instructions, see *Using the COBOL Wrapper for CICS with Call Interfaces (z/OS and z/VSE)*.
 2. associated with IDL file *example.idl*.
 3. SQRECLT uses CICS Map definition SQREMAP.
 4. SQRECLT and client interface object SQUARE are linked together.
 5. SQRECLT installed as single CICS program.
3. Adapt the JCL to your needs.

For more information, refer to the readme file in EntireX directory *examples/RPC/basic/example/CobolClient/zosCICS/CallInterface* under UNIX or Windows.

Basic RPC Server Examples - CALC, SQUARE

This section covers the following examples:

- CALC Server
- SQUARE Server

CALC Server

For CICS under operating system z/OS, the CALC server is built with COBOL Wrapper "CICS with DFHCOMMAREA calling convention" interface type. See *Server Interface Types* for more information.

Name	Type	Data Set	Description	Notes
CALC	COBOL source code	EXP970.DVCO	A server application providing the remote procedure CALC (RPC service), with associated <i>example.idl</i> .	1
CALCDFH	CICS CSD	EXP970.DVCO	CSD Definition for remote procedure CALC (RPC service).	
CALCIGY	JCL	EXP970.DVCO	Job (JCL) to build the remote procedure CALC (RPC service).	2

Notes:

1. Application built according to the server-side build instructions, see *Using the COBOL Wrapper for CICS with DFHCOMMAREA Calling Convention (z/OS and z/VSE)*.
2. Adapt the JCL to your needs.

For more information, refer to the readme file in EntireX directory *examples/RPC/basic/example/CobolServer/zosCICS* under UNIX or Windows.

SQUARE Server

For CICS under operating system z/OS, the SQUARE server is built with COBOL Wrapper "CICS with DFHCOMMAREA calling convention" interface type. See *Client Interface Types* for more information.

Name	Type	Data Set	Description	Notes
SQREDFH	CICS CSD	EXP970.DVCO	CSD Definition for remote procedure SQUARE (RPC service).	
SQREIGY	JCL	EXP970.DVCO	Job (JCL) to build the remote procedure SQUARE (RPC service).	2
SQUARE	COBOL source code	EXP970.DVCO	A server application providing the remote procedure SQUARE (RPC service), with associated <i>example.idl</i> .	1

Notes:

1. Application built according to the server-side build instructions, see *Using the COBOL Wrapper for CICS with DFHCOMMAREA Calling Convention (z/OS and z/VSE)*.
2. Adapt the JCL to your needs.

For more information, refer to the readme file in EntireX directory *examples/RPC/basic/example/CobolServer/zosCICS* under UNIX or Windows.

Reliable RPC Client Examples - SENDMAIL

This section covers the following examples:

- SENDMAIL Client using DFHCOMMAREA
- SENDMAIL Client using Call Interface

SENDMAIL Client using DFHCOMMAREA

For CICS under operating system z/OS, the following CALC client is implemented with interface type "CICS with DFHCOMMAREA calling convention". See *Client Interface Types* for more information.

Name	Type	Data Set	Description	Notes
SEND1DFH	CICS CSD	EXP970.DCCO	CSD Definition for RPC client SEND1CLT.	
SEND1IGY	JCL	EXP970.DCCO	Job (JCL) to build the RPC client SEND1CLT.	1
SEND1MAP	CICS Map	EXP970.DCCO	CICS Map definition for RPC client SEND1CLT.	
SEND1	COBOL source code	EXP970.DCCO	Client interface object for IDL program SEND1, alias of SENDMAIL.	2
SEND1CLT	COBOL source code	EXP970.DCCO	An RPC client application calling the reliable remote procedure (RPC service) SEND1, alias of SENDMAIL.	3
SEND1MAP	COBOL copybook	EXP970.DICO	Description of input and output fields of map SEND1MAP.	
SEND1	COBOL copybook	EXP970.DICO	Client interface object copybook for IDL program SEND1, alias of SENDMAIL.	2

Notes:

1. Adapt the JCL to your needs.
2. Under z/OS, client interface objects are delivered with the installation; under UNIX and Windows, generate these objects with the EntireX Workbench.
3. Application
 1. built according to the client-side build instructions, see *Using the COBOL Wrapper for CICS with DFHCOMMAREA Calling Convention (z/OS and z/VSE)*. See also *Reliable RPC for COBOL Wrapper*
 2. associated with IDL file *mailWithPgmAlias.idl*
 3. uses CICS Map definition SEND1MAP
 4. client interface object name SEND1 different from remote procedure name SENDMAIL (RPC service)

5. SEND1CLT and client interface objects SEND1 installed as separate CICS programs.

For more information, refer to the readme file in EntireX directory *examples/RPC/reliable/CobolClient/zosCICS/DFHCOMMAREA* under UNIX or Windows.

SENDMAIL Client using Call Interface

For CICS under operating system z/OS, the following CALC client is implemented with interface type "CICS with standard linkage calling convention". See *Server Interface Types* for more information.

Name	Type	Data Set	Description	Notes
SENDCLT	COBOL source code	EXP970.DCCO	An RPC client application calling the reliable remote procedure (RPC service) SENDMAIL.	1
SENDDFH	CICS CSD	EXP970.DCCO	CSD Definition for RPC client SENDCLT.	
SENDIGY	JCL	EXP970.DCCO	Job (JCL) to build the RPC client SENDCLT.	2
SENDMAIL	COBOL source code	EXP970.DCCO	Client interface object for IDL program SENDMAIL.	3
SENDMAP	CICS Map	EXP970.DCCO	CICS Map definition for RPC client SENDCLT.	
SENDMAIL	COBOL copybook	EXP970.DICO	Client interface object copybook for IDL program SENDMAIL.	3
SENDMAP	COBOL copybook	EXP970.DICO	Description of input and output fields of map SENDMAP.	

Notes:

1. Application

1. built according to the client-side build instructions, see *Using the COBOL Wrapper for CICS with Call Interfaces (z/OS and z/VSE)*. See also *Reliable RPC for COBOL Wrapper*
2. associated with IDL file *mail.idl*
3. uses CICS map definition SENDMAP
4. SENDCLT and client interface object SENDMAIL are linked together
5. installed as single CICS program.

2. Adapt the JCL to your needs.

3. Under z/OS, client interface objects are delivered with the installation; under UNIX and Windows, generate these objects with the EntireX Workbench.

For more information, refer to the readme file in EntireX directory *examples/RPC/reliable/CobolClient/zosCICS/CallInterface* under UNIX or Windows.

Reliable RPC Server Example - SENDMAIL

For CICS on operating system z/OS, the SENDMAIL server is built with COBOL Wrapper "CICS with DFHCOMMAREA calling convention" interface type. See *Server Interface Types* for more information.

Name	Type	Data Set	Description	Notes
SENDDFH	CICS CSD	EXP970.DVCO	CSD Definition for remote procedure SENDMAIL (RPC service).	
SENDIGY	JCL	EXP970.DVCO	Job (JCL) to build remote procedure SENDMAIL (RPC service).	1
SENDMAIL	COBOL source code	EXP970.DVCO	a server application providing the reliable remote procedure SENDMAIL (RPC service), with associated <i>mail.idl</i> .	2

Notes:

1. Application built according to the server-side build instructions. See *Using the COBOL Wrapper for CICS with DFHCOMMAREA Calling Convention (z/OS and z/VSE)*. See also *Reliable RPC for COBOL Wrapper*.
2. Adapt the JCL to your needs.

For more information, refer to the readme file in EntireX directory *examples/RPC/reliable/CobolServer/zosCICS* under UNIX or Windows.

Advanced CICS Channel Container RPC Server Example - DFHCON

For CICS on operating system z/OS, the TWOC server is built with COBOL Wrapper "CICS with Channel Container calling convention" interface type. See *Server Interface Types* for more information.

Name	Type	Data Set	Description	Notes
TWOC	COBOL source code	EXP970.DVCO	A server application providing the remote procedure TWOC (RPC service), with associated <i>CICSChannelContainer.idl</i> .	1
TWOCDFH	CICS CSD	EXP970.DVCO	CSD Definition for remote procedure TWOC (RPC service).	
TWOCIGY	JCL	EXP970.DVCO	Job (JCL) to build remote procedure TWOC (RPC service).	2

1. Application built according to the server-side build instructions. See *Using the COBOL Wrapper for CICS with Channel Container Calling Convention (z/OS)*.
2. Adapt the JCL to your needs.

For more information, see the readme file in EntireX directory *examples/RPC/advanced/CICSgreater32K/ChannelContainer/CobolServer/zosCICS* under UNIX or Windows.

Advanced CICS Large Buffer RPC Server Example - DFHLBUF

For CICS on operating system z/OS, the LBUF server is built with COBOL Wrapper "CICS with DFHCOMMAREA large buffer interface" interface type. See *Server Interface Types* for more information.

Name	Type	Data Set	Description	Notes
LBUF	COBOL source code	EXP970.DVCO	A server application providing the remote procedure LBUF (RPC service), with associated <i>CICSLargeBuffer.idl</i> .	1
LBUFDHFH	CICS CSD	EXP970.DVCO	CSD Definition for remote procedure LBUF (RPC service).	
LBUFIGY	JCL	EXP970.DVCO	Job (JCL) to build remote procedure LBUF (RPC service).	2

Notes:

1. Application built according to the server-side build instructions. See *Using the COBOL Wrapper for CICS with DFHCOMMAREA Large Buffer Interface (z/OS and z/VSE)*.
2. Adapt the JCL to your needs.

For more information, refer to the readme file in EntireX directory *examples/RPC/advanced/CICSgreater32K/LargeBuffer/CobolServer/zosCICS* under UNIX or Windows.