

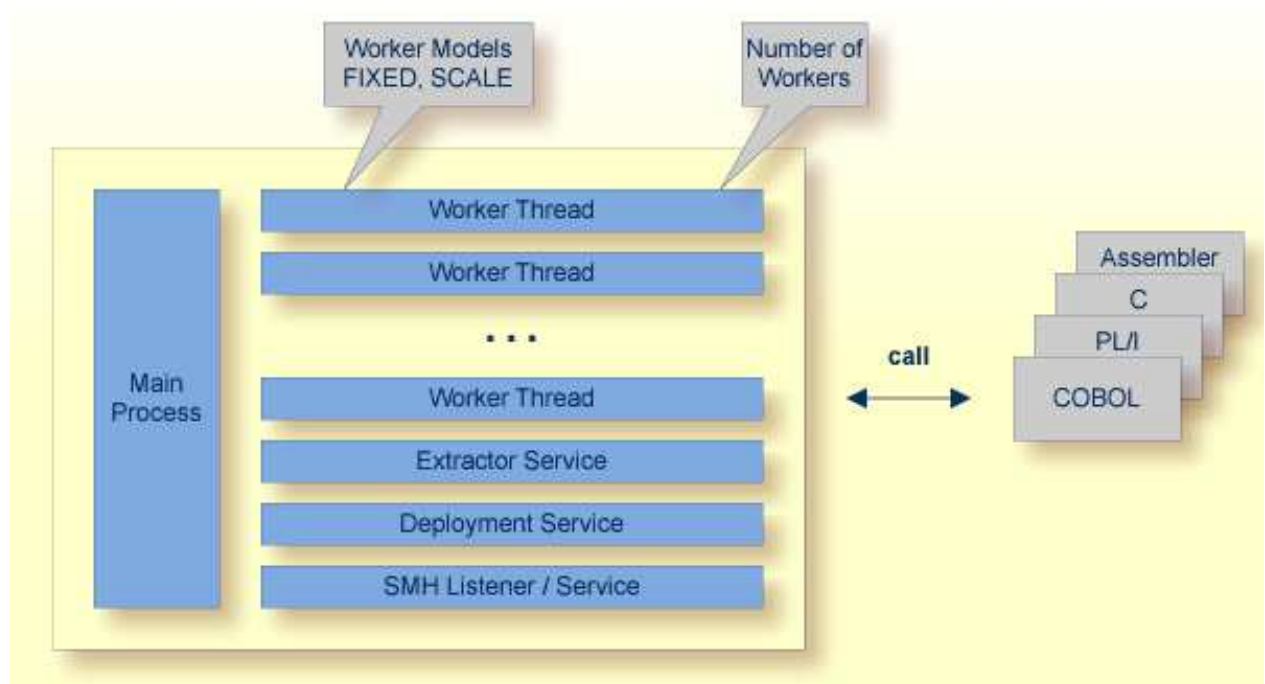
Inside the RPC Server

The EntireX z/OS Batch RPC Server allows standard RPC clients to communicate with RPC servers on the operating system z/OS running in batch mode. It supports the programming languages COBOL, PL/I and C.

This chapter covers the following topics:

- Worker Models
- Inbuilt Services
- Impersonation
- Usage of Server Mapping Files

Worker Models



RPC requests are worked off inside the RPC server in worker threads, which are controlled by a main thread. Every RPC request occupies during its processing a worker thread. If you are using RPC conversations, each RPC conversation requires its own thread during the lifetime of the conversation. The Batch RPC Server provides two worker models:

- **FIXED**
The *fixed* model creates a fixed number of worker threads. The number of worker threads does not increase or decrease during the lifetime of an RPC server instance.

- **SCALE**

The *scale* model creates worker threads depending on the incoming load of RPC requests.

A maximum number (thru value of the `workermodel` parameter) of worker threads created can be set to restrict the system load. The minimum number (from value of the `workermodel` parameter), allows you to define a certain number of threads - not used by the currently executing RPC request - to wait for new RPC client requests to process. In this way the RPC server is ready to handle many RPC client requests arriving at the same time.

See parameter `workermodel` under *Configuring the RPC Server*.

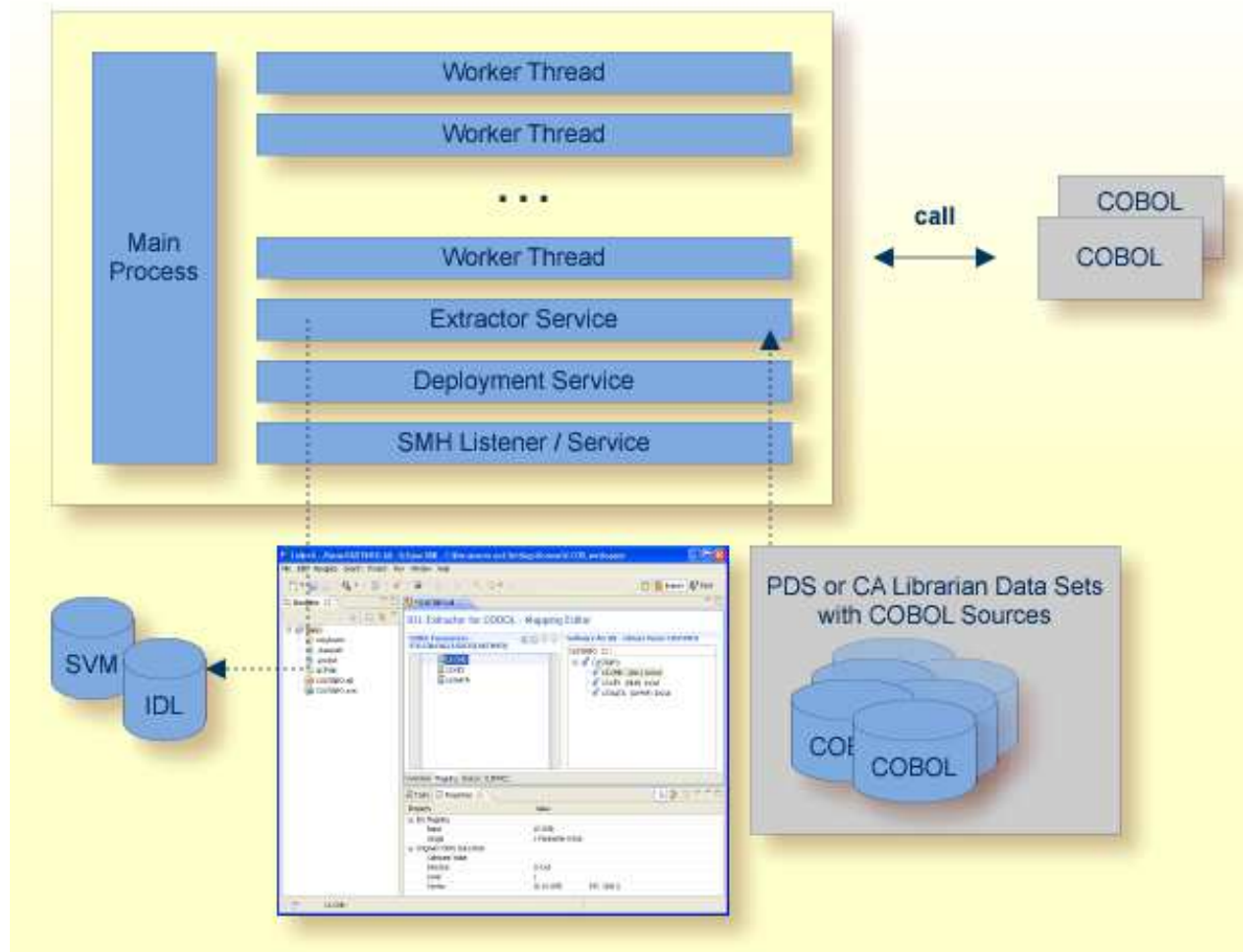
Inbuilt Services

Batch RPC Server provides several services for ease-of-use:

- Extractor Service
- Deployment Service
- SMH Listener Service

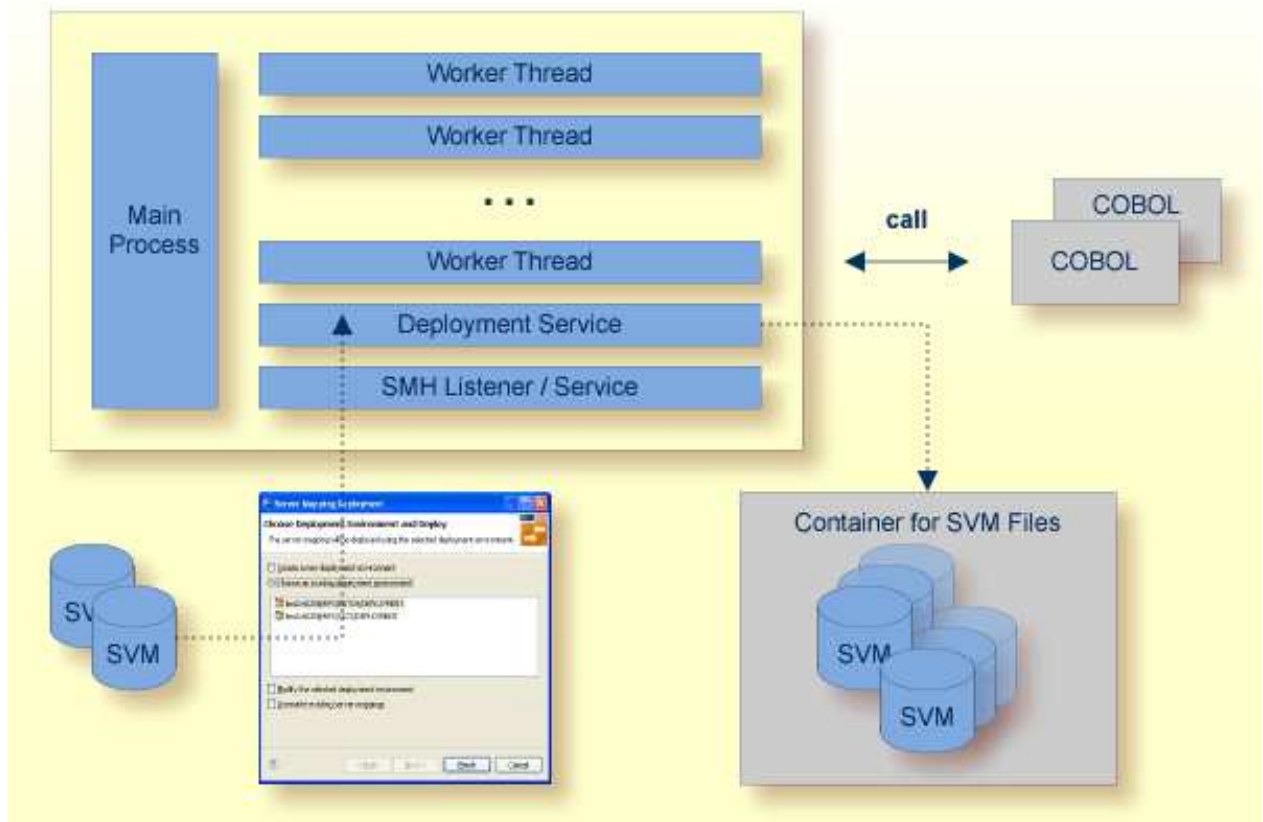
Extractor Service

The Extractor Service is a prerequisite for remote extractions with the *IDL Extractor for COBOL* and *IDL Extractor for PL/I*. See *Extractor Service* for more information.



Deployment Service

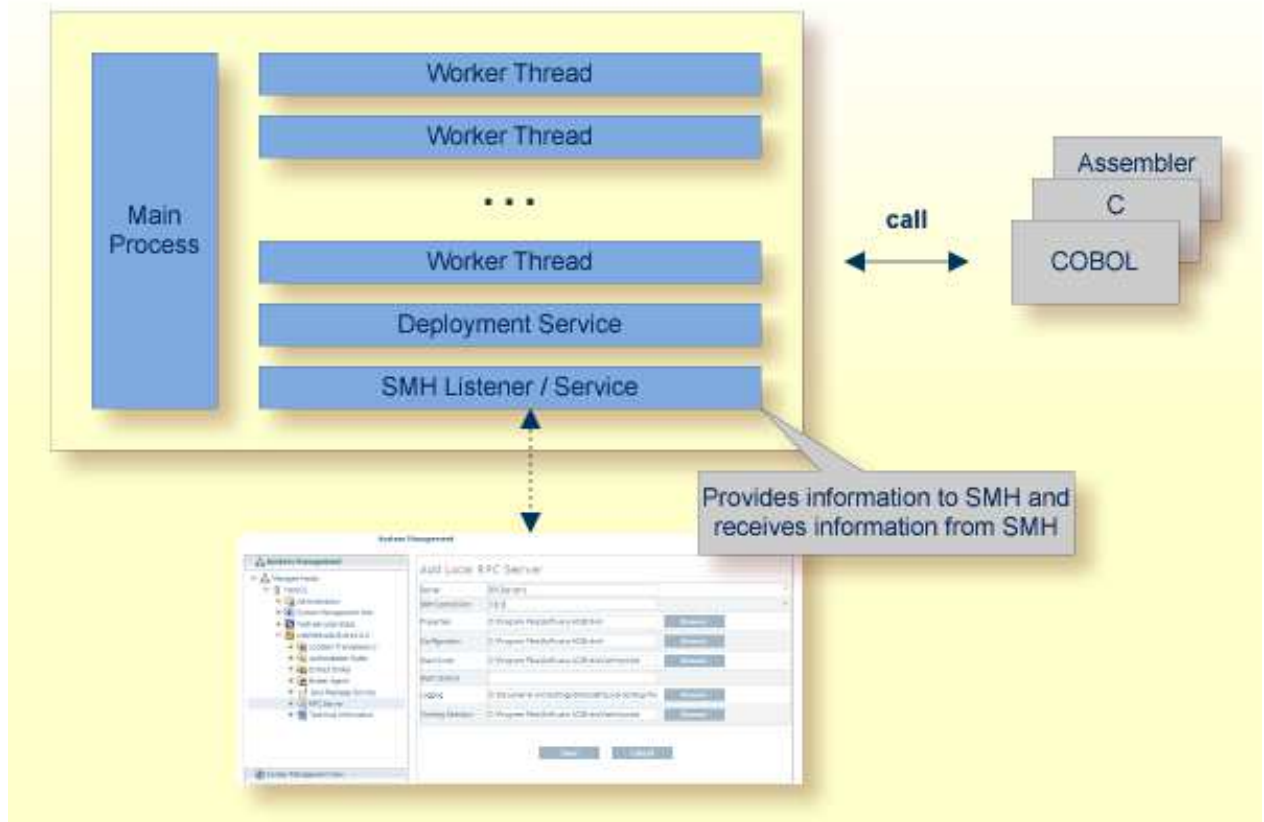
The Deployment Service allows you to deploy server-side mapping files (EntireX Workbench files with extension .svm) interactively using the *Server Mapping Deployment Wizard*. On the RPC server side, the server-side mapping files are stored in a server-side mapping container (VSAM file). See *Server-side Mapping Files in the RPC Server* and *Deployment Service* for configuration information.



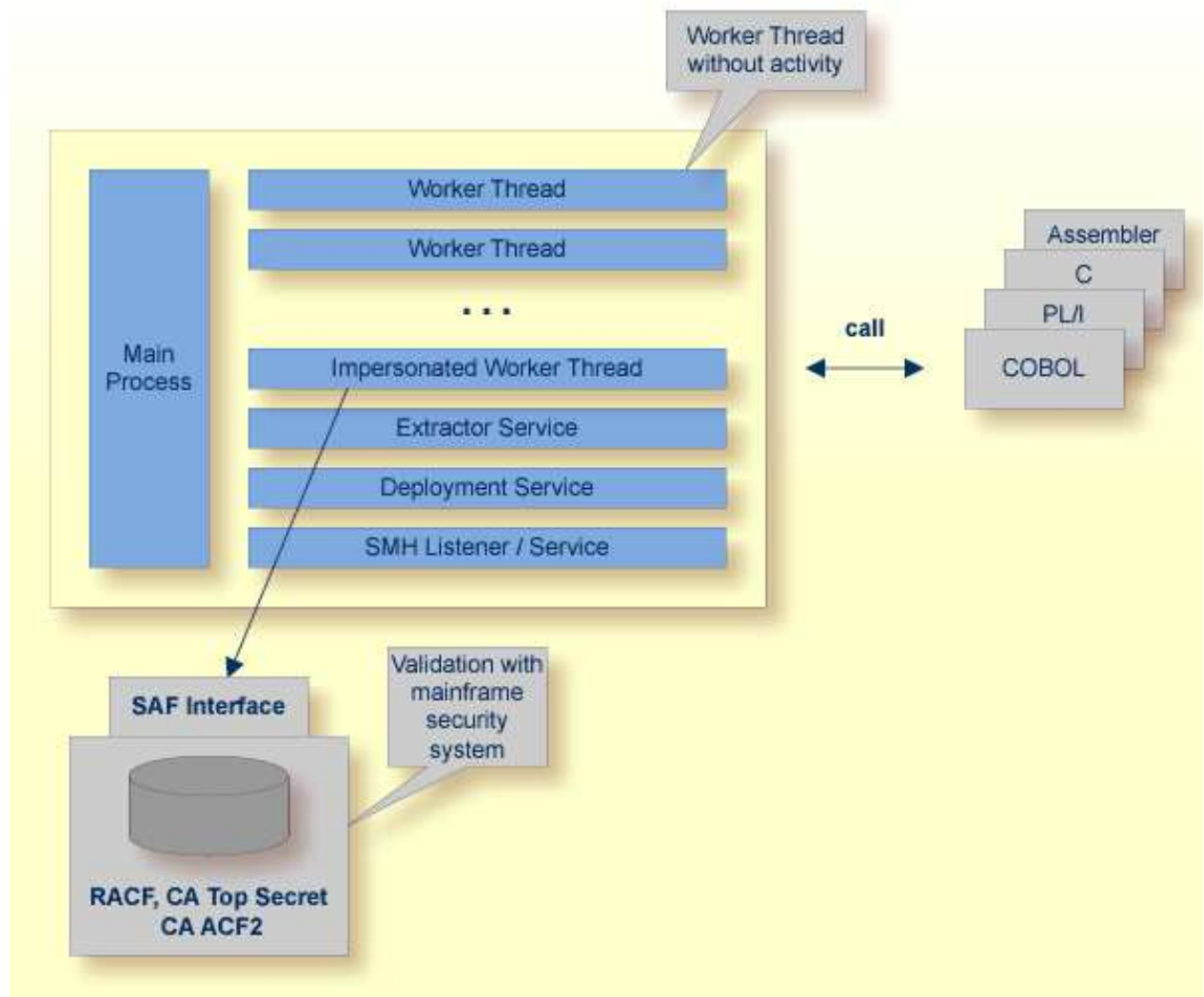
SMH Listener Service

With the SMH Listener Service you use the System Management Hub to monitor the RPC server. See *Administering the EntireX RPC Servers using System Management Hub* under UNIX | Windows.

The SMH Service is switched on if the parameter `smhport` is set. See parameter `smhport` under *Configuring the RPC Server*.



Impersonation



The Batch RPC Server can be configured to execute the RPC request impersonated under the RPC client user ID. This means that for the request execution, the worker thread gets the identity of the RPC client. This is necessary when accessing (security) protected data sets, for example with the *Extractor Service*. The way authentication is carried out can be controlled by the RPC parameter `impersonation`.

- For `impersonation` value `AUTO`, the Batch RPC Server does not validate RPC passwords, so you have to make sure the RPC client is correctly authenticated, either by using a secure EntireX Broker (validation must be against the correct mainframe security repository where z/OS user IDs are defined) or with your own security implementation.
- For `impersonation` value `YES`, the Batch RPC Server uses the RPC user ID and password supplied by the RPC client for authentication and impersonation of the client. This means that the RPC server validates the password.

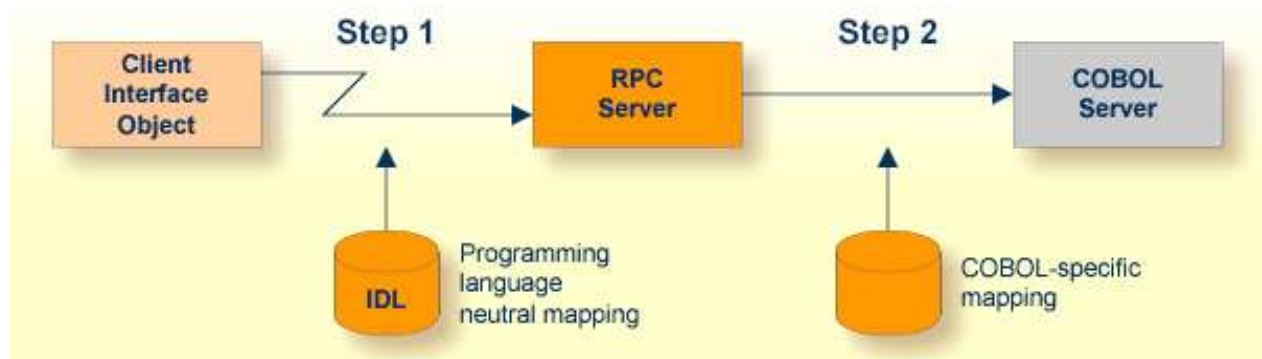
The picture above shows the configuration `impersonation=yes`.

The lifetime of an impersonated task starts when an open request for an RPC conversation or a non-conversational RPC request is received. It ends when the RPC conversation stops (after a commit operation or timeout) or when the non-conversational RPC request has been performed.

Usage of Server Mapping Files

There are many situations where the Batch RPC Server requires a server mapping file to correctly support special COBOL syntax such as `REDEFINES`, `SIGN LEADING` and `OCCURS DEPENDING ON` clauses, `LEVEL-88` fields, etc.

Server mapping files contain COBOL-specific mapping information that is not included in the IDL file, but is needed to successfully call the COBOL server program.



The RPC server marshals the data in a two-step process: the RPC request coming from the RPC client (Step 1) is completed with COBOL-specific mapping information taken from the server mapping file (Step 2). In this way the COBOL server can be called as expected.

The server mapping files are retrieved as a result of the *IDL Extractor for COBOL* extraction process and the *COBOL Wrapper* if a COBOL server is generated. See *When is a Server Mapping File Required?*.

There are *server-side* mapping files (*EntireX Workbench* files with extension `.svm`) and *client-side* mapping files (*Workbench* files with extension `.cvm`). See *Server Mapping Files for COBOL* and *How to Set the Type of Server Mapping Files*.

If you are using server-side mapping files, you need to customize the server-side mapping container with parameter `svm`. See *Configuring the RPC Server*.

Note:

Server mapping files are used for COBOL only.