

EbrService

Table Of Contents

- [Table Of Contents](#)
- [Introduction](#)
- [Developing Services](#)
 - [Character Set Handling](#)
 - [XML Namespace Handling](#)
 - [Wildcard Support](#)
 - [Handling Empty Fields](#)
 - [Handling Paged Results](#)
 - [Error Handling](#)
- [Deployment](#)
 - [Local Services](#)
 - [Remote Services](#)
 - [Local Vs Remote Services](#)
- [Comments / Feedback](#)

Introduction

An [EbrService](#) is a component offered by an [EbrNode](#) that provides some valuable operation, e.g. it may offer a company report when given a company number, or produce an image of the company's latest set of accounts, or simply return a confirmation that the [EbrNode](#) is still active.

Each [EbrService](#) has a unique [EbrServiceId](#) and performs a single defined operation, e.g. to return a Company Profile. The task of [EbrDevelopers](#) will be to implement the [EbrServices](#) permitted by their [DataSource](#).

Developing Services

Character Set Handling

All [EbrMessages](#) that handle XML [EbrMessagePayloads](#) must be encoded in the UTF-8 version of Unicode.

This has obvious implications on any [EbrServices](#) you develop as each XML [EbrService](#) must be capable of handling UTF-8 encoded strings. Ideally, every [EbrGateway](#) and information source would already be UTF-8 enabled, but, of course, this is not always the case.

Typically, your chosen programming environment and toolkits will hide the complexity of the character set conversion, but you should always be aware that the set of data your passing to your information source may contain special characters that your [EbrGateway](#) will not be expecting, for example, if your [EbrGateway](#) expects only standard ASCII strings, then you must first convert the UTF-8 data to ASCII, losing any special characters entered by the user, or reject the entire message by returning a code of -4 in X-Ebr-Service-Status.

For more information about Unicode and UTF-8, the following links are recommended

<http://www.alanwood.net/unicode/Alan> Wood's Unicode Resources


<http://www-106.ibm.com/developerworks/linux/library/l-linuni.html>Linux Unicode Programming

<http://www.cl.cam.ac.uk/~mgk25/ucs/examples/UTF-8> Examples

<http://www.cl.cam.ac.uk/~mgk25/unicode.html>Unix/Linux Unicode FAQ

<http://www.unicode.org/Unicode> Home Page

<http://www.tldp.org/HOWTO/Unicode-HOWTO.html>Unicode HOWTO

 - **NOTE:** Note The Content-Type of [MessageParts?](#) which contain EBR-XML data must be set to `text/xml; charset="utf-8"`, e.g.

Content-Type: `text/xml; charset="utf-8"`

XML Namespace Handling

The correct namespace for all [EbrMessages](#) that have XML [EbrMessagePayloads](#) must be of the following form:

```
<CompanyProfileReply xmlns="http://ebr.orctel.com/ebr/xml/CompanyProfileReply">
...
...
</CompanyProfileReply>
```

i.e. the last section of the namespace must match the root element name of the [EbrMessage](#). The leading URL (<http://ebr.orctel.com/ebr/xml/>) must never be changed.

Wildcard Support

If a field in a [EbrMessage](#) request contains an asterisk character (*) as the final character (right-most), that field should be interpreted as a wildcard and the appropriate search procedure created for your information source (if possible).

 - **NOTE:** There is an implicit "AND" association between all fields in an [EbrMessage](#) request.

Handling Empty Fields

If your [EbrService](#) does not support an optional field in a reply, e.g. `FiscalCode` in a `CompanyProfileReply` then you should not set that element in the reply, i.e. it must not appear at all.

Background: it is intended that fields not present in the reply will not be shown at the [CommonUserInterface](#), i.e. the label for the field will not be displayed. Fields that are in the message but empty will have the label displayed.

However, if you **typically support** `FiscalCode`, or the value of `FiscalCode` is empty coming from your information source then an empty `FiscalCode` element should appear in the returned message, e.g.

```
<CompanyProfileReply>
<!-- Mini example -->
<CompanyName>Oracle</CompanyName>
<CompanyNumber>Oracle</CompanyNumber>
<FiscalCode/> <!-- Empty field -->
</CompanyProfileReply>
```

Note: if the value is a [TableCode](#) then you can reference the Code "Empty" in the System table of the EBR [TableCodeFile](#). This Code has the value of an empty string and is useful to prevent the normal debug display of (- - - -) for an empty table code.

Handling Paged Results

For [EbrServices](#) that return a list of results, e.g. [CompanySearchReply](#), there may be cases where the number of items returned in the message (also known as rows, or hits) is not the same as the number of items available from the [EbrGateway](#). For example, a [EbrGateway](#) search for "MEDIA" from its local database system may result in 1000 items, but only 100, say, can be returned in the message.

In these cases the [EbrGateway](#) should communicate such information via the attributes available within the <DataInfo> structure of the [EBR Header](#) structure that is common to all EBR messages.



- **NOTE:** There is no pre-defined limit for the number of items that can be returned in an [EbrMessage](#).

Error Handling

If you encounter a fatal error condition in the operation of your [EbrService](#) you must return the original [EbrMessage](#) request that generated the error with one difference - you must alter the X-Ebr-Service-Status [EbrMessagePartHeader](#) with the appropriate error code (see [ErrorCodeTable](#)).



- **NOTE:** There is no "EBR Error" type XML schema. Error information is communicated in the [EbrMessagePartHeader](#), separate from the message [EbrMessagePayload](#).

See also: [EbrErrorScenarios](#)

Deployment

[EbrServices](#) can be deployed either as dynamic extensions to an [EbrNode](#) ([LocalService](#)) or can alternatively be hosted within a privately developed custom server process ([EbrGateway](#)) for handling [EbrService](#) interactions ([RemoteServices](#)).

Local Services

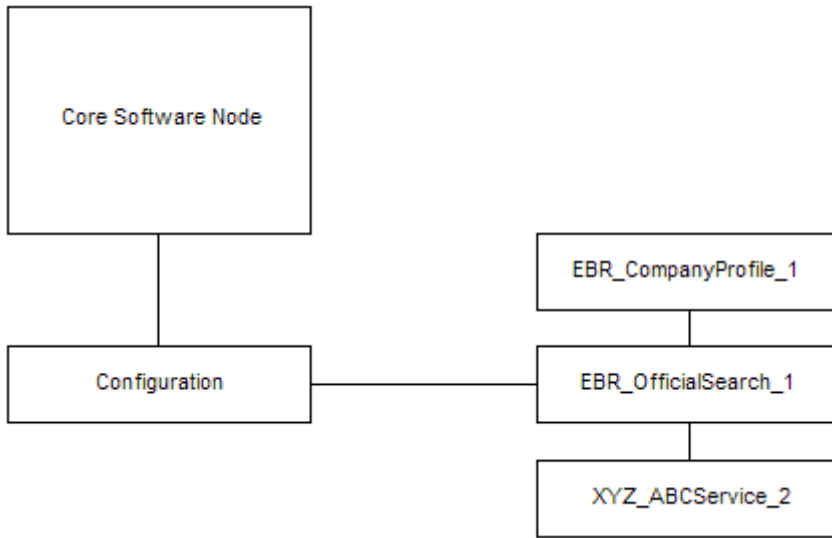
When an [EbrNode](#) receives a message for itself (i.e. the X-Ebr-Destination of the message part is the same as the ThisNode->Id element in the config.xml file) it first checks to see if the [EbrServiceId](#) requested is defined in the list of extension services configured at this Node

From config.xml:

```
<ServiceList>
<Service name="NetworkPoll" handler="com.orctel.ebr.service.NetworkPollService"/>
<Service name="CompanySearch_1" handler="com.orctel.ebr.gateway.
```

```
CompanySearchService"/>
<Service name="OfficialProfile_1" handler="my.company.services.OfficialProfile"/>
</ServiceList>
```

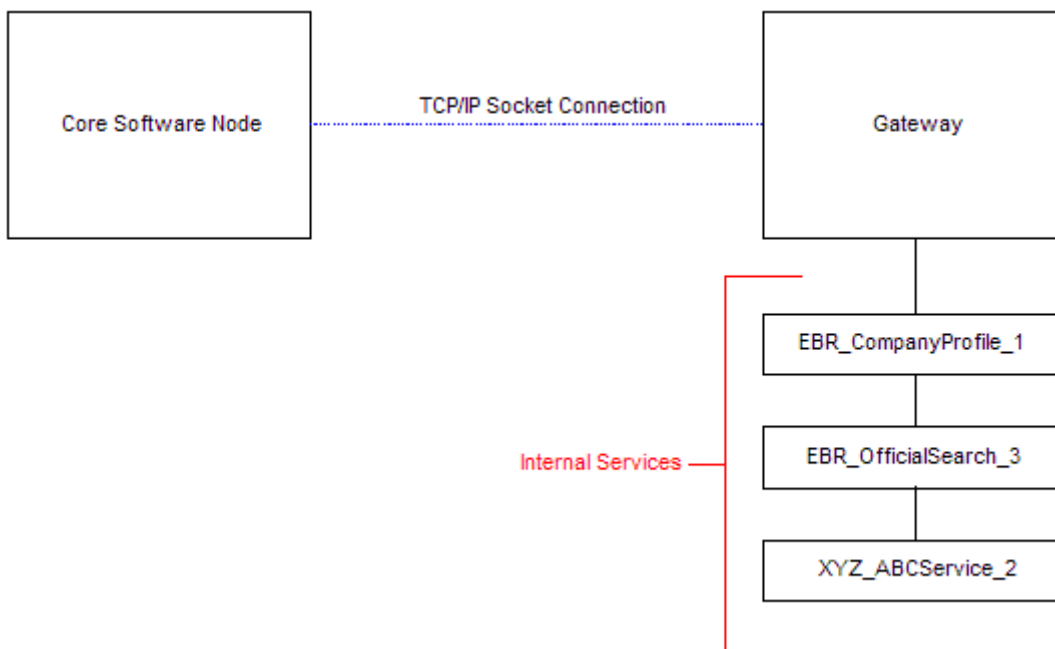
If the Service is registered then the Node calls the (Java) class mapped to handle the [EbrService](#).




Remote Services

If a request for [NonRegisteredEbrService](#) is received then the [EbrNode](#) forwards the exact message onto the configured "GatewayNode=" server. The "GatewayNode=" ([EbrGateway](#)) server gives [EbrDevelopers](#) the opportunity to access the exact same message received by the [EbrNode](#) they have installed by deploying a custom server to handle [EbrMessages](#).

The [EbrGateway](#) can be written in any language that can handle TCP/IP socket communication. Implementation details are left to the operator. An example [EbrGateway](#) and source code can be found as part of the Core Software distribution.



Because the [EbrServices](#) are separate from the Node itself, we term these [RemoteServices](#).

 - **NOTE:** An [EbrNode](#) can provide [LocalServices](#) and offer [RemoteServices](#) simultaneously. Any request for a [EbrService](#) that isn't found in the local list will automatically be sent to a configured [EbrGateway](#) offering [RemoteServices](#).

Local Vs Remote Services

The choice of whether to use [LocalServices](#) or implement an [EbrGateway](#) to handle [EbrServices](#) outside of the [CoreSoftware](#) is left to the [EbrDeveloper](#).

[LocalServices](#):

- Must be written in Java (or a language that can generate Java byte code, e.g. Jython).
- Require no additional network code development.

[RemoteServices](#):

- Require development, installation and maintenance of an [EbrGateway](#)
- New [EbrGateway](#) can be written in any language, allowing [EbrServices](#) to also be written in any language.
- Gives the [EbrOperator](#) full control over [EbrService](#) handling.

From here on this document focuses on developing local Java Services to be used within the distributed [CoreSoftware](#) but the same processing principles can still be applied to other languages.

Topic revision r1.9 - 30 Oct 2003 - 08:06 GMT - [MartinWood](#)

Topic parents: [WebHome](#) > [AccountHistoryReplyScreen](#)

Copyright © 1999-2003 by the contributing authors. All material on this collaboration platform is the property of the contributing authors.

Ideas, requests, problems regarding TWiki? [Send](#) feedback.