

The SOA Gateway & The Vordel XML Gateway

This document is intended to give technical architects and project managers a detailed view of how the SOA Gateway and The Vordel XML Gateway can integrate existing data and business logic while providing complex XML processing capabilities with minimal impacting on the legacy platform.

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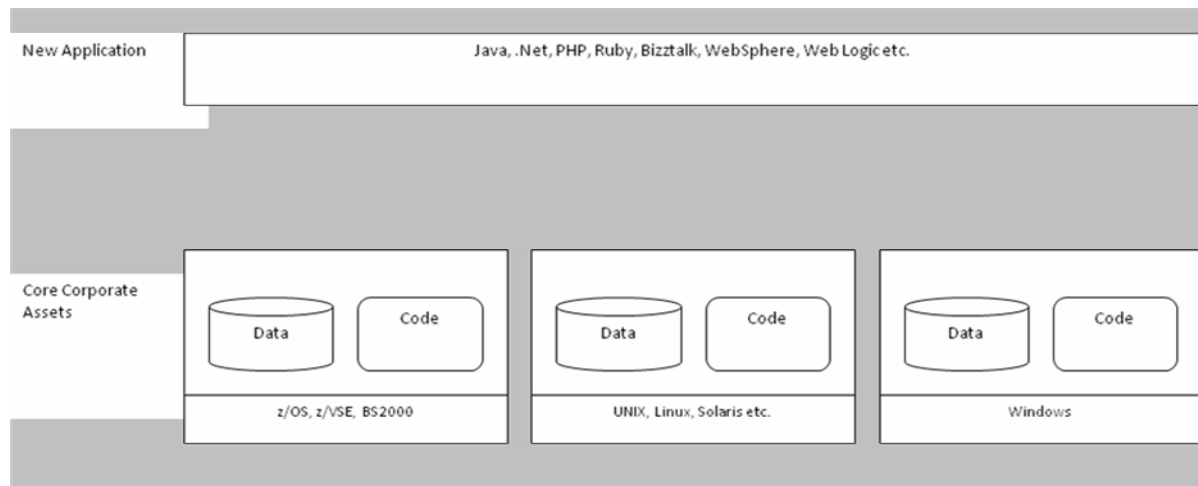
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1. Introduction

It is widely accepted that XML data streams provide the best possible way to enable heterogeneous software and hardware systems to communicate across an enterprise. It is also understood that the processing of XML can be expensive from a processing point of view in particular when the platforms where the data and business logic exist have relatively expensive CPU cycles. This can be further exaggerated when supporting many of the standards that have build up around XML. This document shows how the SOA Gateway and the Vordel XML Gateway provide a comprehensive solution for using XML integration with legacy systems while processing the XML data streams in the most cost effective way.

2. The Business Case

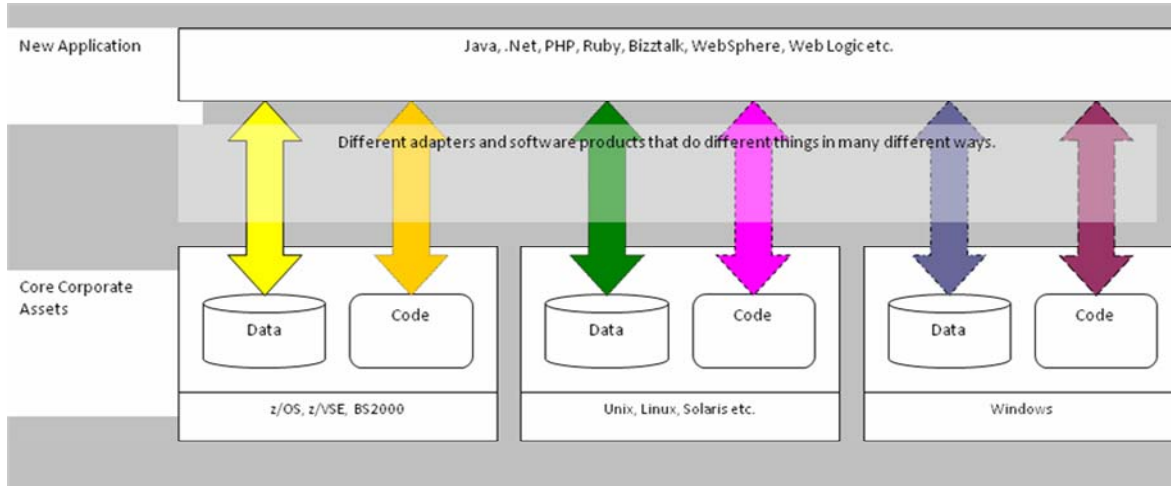
Very few projects are approved and implemented without a cost benefit analysis and a view of the return on investment (ROI) from the project. This leaves many projects extremely sensitive to the cost of implementation. There are many new platforms, languages and technologies that allow for the cost effective implementation and execution of such projects, however, getting at existing data and business logic is still the Achilles heel of most projects. Ultimately the challenge is illustrated in the following diagram: how can new applications get to this data and business logic?



This section illustrates how the SOA Gateway and the Vordel XML Gateway can now make it possible to use a fully integrated approach for projects which need access to existing data and business logic in a cost effective manner.

2.1. Using the Traditional Approach

It is possible today to use integration infrastructures to get at data and business logic, however, each platform and language generally has its own mechanism to access the core asset. For each different type of database or code, or even different version of these, the mechanism for getting at the data can differ and require different approaches from the application that needs to see the data. We end up with architecture like the following:

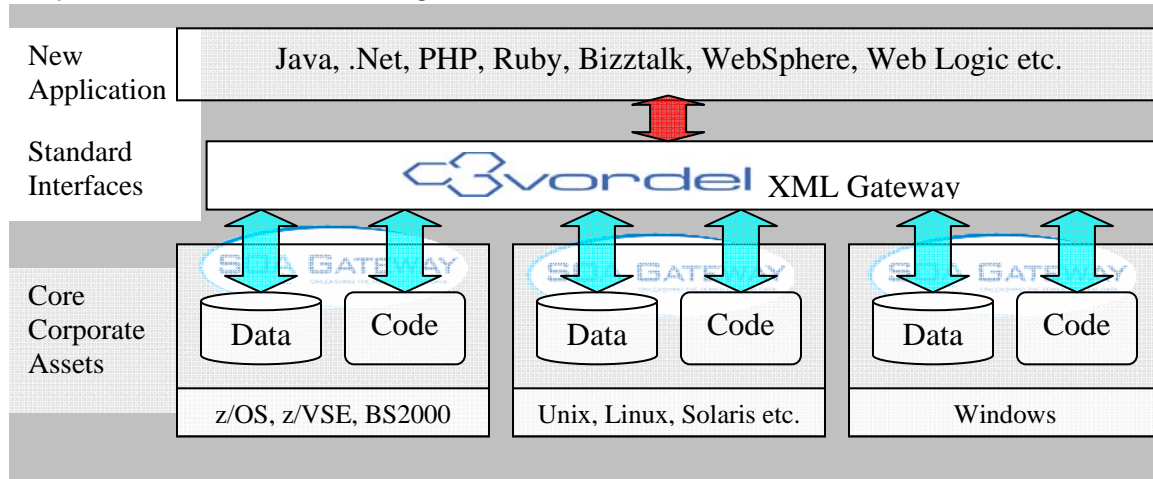


This leads to the following issues with this approach:

1. Each different type of access requires installation and configuration initially along with a maintenance cycle to keep the software up to date.
2. The format of the data may be different on each database or in different chunks of business logic. For example, a person's nationality may be marked as 'IR', 'UK' or 'DE' on one database whereas it will be 'Ireland', 'United Kingdom' or 'Germany' or even '1', '2' or '3' on another database. This means that the application developer must have knowledge about the database being accessed and the schema in use on that database.
3. Flexibility is lost as each type of access has its own specific configuration approach.
4. Securing architectures such as these is extremely difficult as it requires a different approach for each different type of access adding exponential cost to the support and maintenance of security for the environments.
5. The auditing of access to these resources will result in totally different format log files making it difficult to see access across multiple resources and normally requiring different sets of tools to deal with the files.
6. Each mechanism is different so the application developers need to learn different ways to access different systems. As the number of different databases or languages grows, the problem to access them grows exponentially as different technologies can give different results for what looks like the same question.
7. Different mechanisms have different ways of debugging problems and thus it's extremely difficult to tie related debugging events together from different software implementations.
8. Ultimately a single, XML based solution to access any database or business logic would alleviate all of these problems when it can be done securely and in a cost effective manner.

2.2. Using the SOA Gateway and Vordel XML Gateway

Together the SOA Gateway and the Vordel XML Gateway can resolve all of the issues outlined in the previous section. The following illustrates the architecture:



This offers the optimum solution to the problem with the SOA Gateway making the data and business logic available as XML Web Services with minimal overhead on the existing platform. The Vordel XML Gateway can then provide enhanced XML and standards based processing of the data so that this processing overhead is not incurred on the existing backend platform.

In more detail, the SOA Gateway via the blue arrows, can make the data available in a simple XML fashion as follows:

1. Once the SOA Gateway is installed, it literally takes minutes to define the services within the SOA Gateway to make your existing data and business logic available as services.
2. Once a service is available, it can be used again and again from any number of systems at no additional cost.
3. Once the service is available, it can be used as a SOAP based Web Service or via a URL (REST) based access .
4. As the Vordel XML Gateway understands these services out of the box, these services can be understood immediately by the Vordel XML Gateway and the administrator can define policies around how those services are used by other users.
5. The Vordel XML Gateway can then make the enhanced services available which can be accessed by any language or technology available today such as Excel, Word, InfoPath, Java, vb.net, c#.net and so on.

The Vordel XML Gateway enhances the overall solution by offering the following:

1. Users of the services may authenticate themselves in a number of ways offered by the Vordel XML Gateway.
2. Each service can be protected individually or in groups by policies created by the system administrator based on the organizations requirements.

3. The simple XML structures produced by the SOA Gateway may be transformed and/or enriched by policies defined in the Vordel XML Gateway.
4. The back end systems hosting an organizations' core assets are protected from being attacked by malicious clients on the network by the Vordel XML Gateway.
5. The Vordel XML Gateway can provide a standard audit trail across all services of who used a specific service and when.
6. The Vordel XML Gateway can provide a composite debugging capability across multiple disparate services to greatly simplify the ability to debug problems in an application.

2.3. The Benefits to this and future projects

Ultimately this infrastructure provides the ultimate integration platform into the future as follows:

Robust:	Your services and back end infrastructure are totally protected from attack
Secure:	Users accessing the services are fully authenticated and access to services is only allowed based on policies created by the installation.
Reusable:	Data and business logic services can be used again and again by authorized users once the service has been created
Performant:	The processing required to achieve this is done in the most appropriate place using hardware or software as befits the requirement.
Control:	The organization remains in full control of the deployment of services, the access to those services and the auditing of access to those services.
Flexible:	New services can be created and made available based on existing policies in minutes instead of weeks or months which is common with traditional integration methodologies.

3. Implementing and Using the SOA Gateway

The SOA Gateway has been designed to be as simple as possible to license, install and use in your projects. The following steps can generally be completed in a half a day or less at which point, it is possible to continue creating services from your existing core assets in minutes. In general, the following time is required to start working with the SOA Gateway:

- Registration and download: 30 minutes (depending on the speed of your connection to the Internet)
- Installation of the SOA Gateway Control Centre and one SOA Gateway Server: 1 hour (depending on target platform and speed of the link to that target platform)
- Creation of services: <1 Minute per service

3.1. Installation of the SOA Gateway

The SOA Gateway consists of two distinct pieces of software.

1. The SOA Gateway Control Centre is an Eclipse plug-in that runs in Eclipse. Eclipse and this plug-in are contained in the package downloaded after you register.

- The SOA Gateway Server is installed as a stand alone component on the platform where the data or business logic that you wish to expose is running. The server implementation for all available platforms is also included in the package downloaded after you register. The SOA Gateway Server can then be deployed to each target server using the SOA Gateway Control Centre.

The installation of the SOA Gateway requires that you register for a license for the SOA gateway and download the installation materials. There are free licenses available for most uses with some limitations on commercial usage.

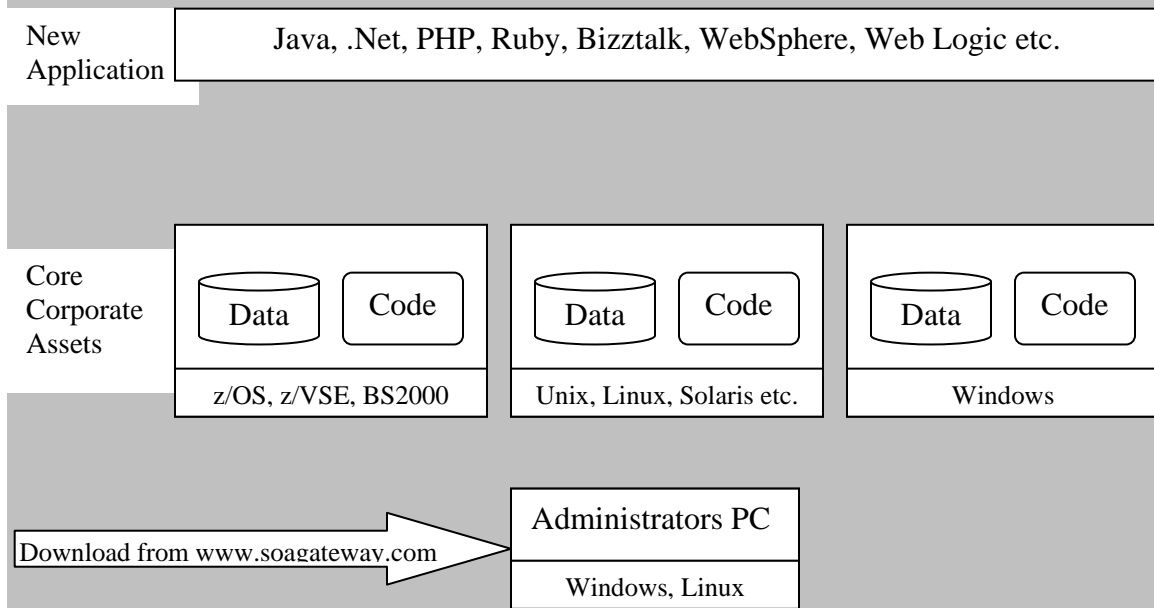
3.1.1. Registering to use the SOA Gateway

You must register to use the SOA Gateway [here](#) as illustrated by the following screenshot.



The screenshot shows the SOA Gateway registration form. At the top, there is a navigation bar with links: Home, Overview, Data Access Fast, Reuse Business Logic, Free Trial, Contact Us, About Us, and Log In. Below the navigation bar, the text reads: "Please fill in the registration form below to get access to the SOA Gateway software and much more." The form itself is titled "Registration form: * Mandatory Fields" and contains the following fields: First Name, Surname, Company, Country (a dropdown menu with "Please Select" selected), Mob/Tel, Email, Confirm your email, Set Password (with a note: "passwords should be 6 characters minimum, preferably alpha & numeric"), and Target Operating System (a dropdown menu with "Please Choose" selected). Below the form, there are two checkboxes: "I agree to be subscribed to the SOA Gateway mailing list from Risaris." and "I accept the [licencing terms & conditions](#).". A "Register" button is located at the bottom of the form. At the bottom left of the form, there is a link: "Read our privacy policy here >>". At the bottom of the page, there is a footer: "Risaris Limited, 6 The Mill Buildings, The Maltings, Bray, Co. Wicklow, Ireland Tel: +353(1)2746840 Fax: +353(1)2745774 info@risaris.com".

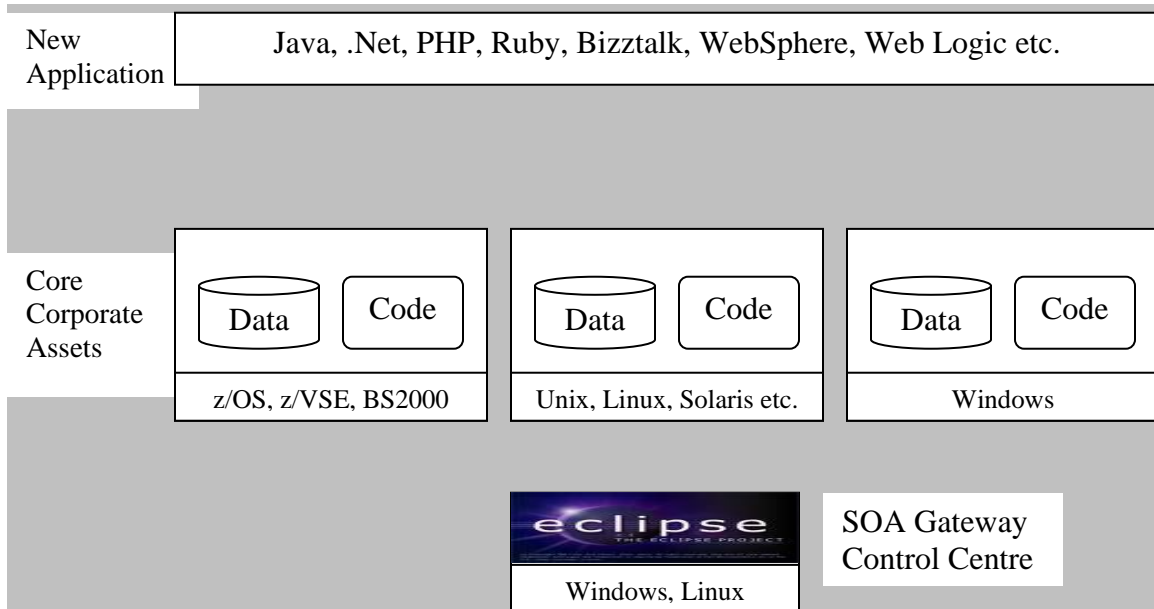
Once you have filled the details in on the above screen and hit the 'Register' button, a confirmation email will be sent to the email account with which you registered. When you have received that email and confirmed the email address, a second email will be sent with a link to continue the process and a license file attached. This link will give you further information about the installation process and will start the download of the SOA Gateway installation materials to your local PC.



This download is approximately 250 Meg and how quickly this downloads will depend on the speed of your link to the Internet.

3.1.2. After the download

Once you have downloaded the package, you are ready to begin installing the SOA Gateway. The next steps are documented in the email sent to you after you have confirmed your registration. Once you have completed those steps, your configuration will look like the following:

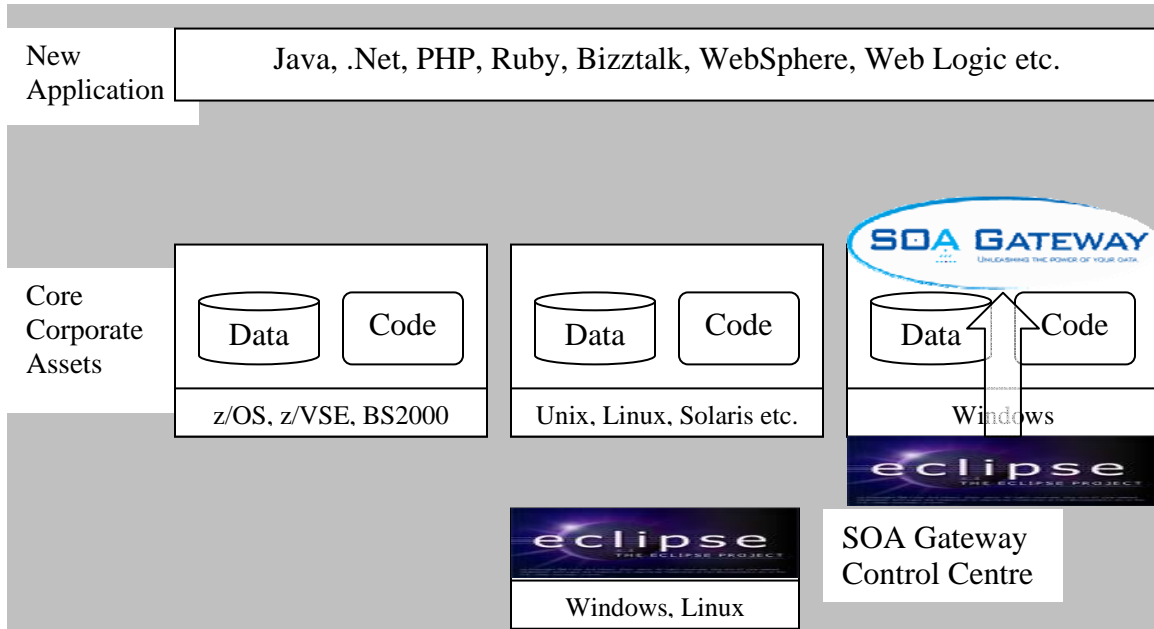


3.1.3. Installing and Configuring the SOA Gateway Server

Once the SOA Gateway Control Centre has been started in Eclipse, you will need to install the SOA Gateway on the target platform. This is a little different depending on your target operating system:

Windows Installation

On Windows, the SOA Gateway Control Centre must be installed on the Windows system where you wish to install the SOA Gateway server. When you select that you wish to install the SOA Gateway server on Windows, the Control Centre will launch the Windows Setup program on the local machine and the SOA Gateway server installation and configuration steps are managed by that setup script.

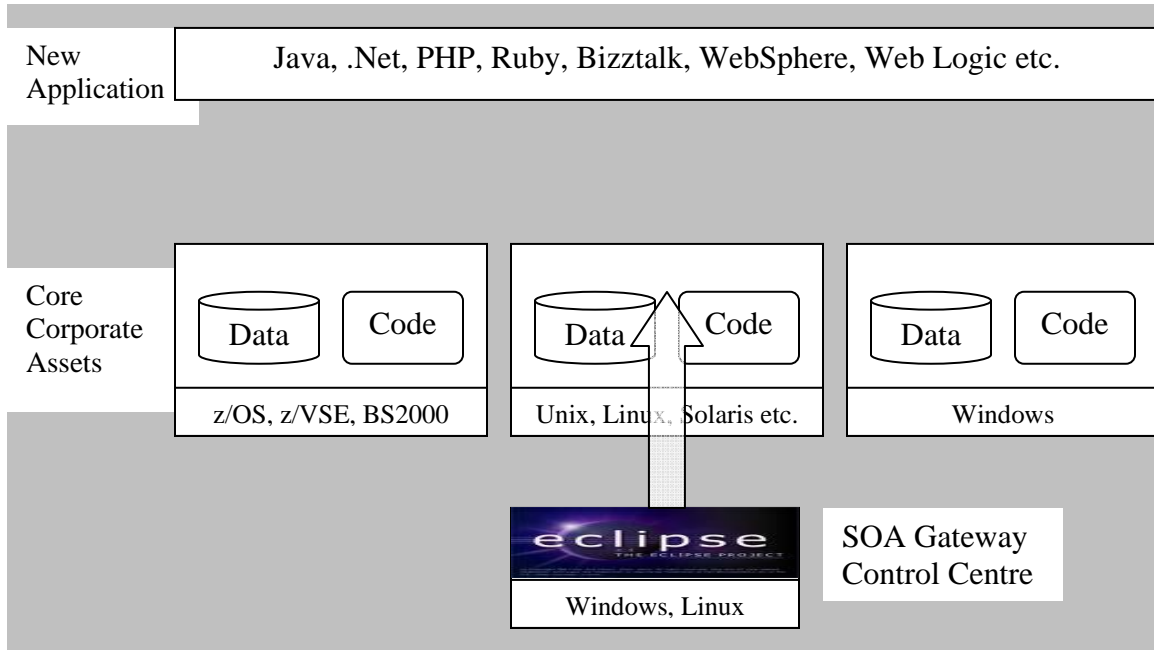


Once the setup script has completed, you will be returned to the Control Centre Deployment Wizard.

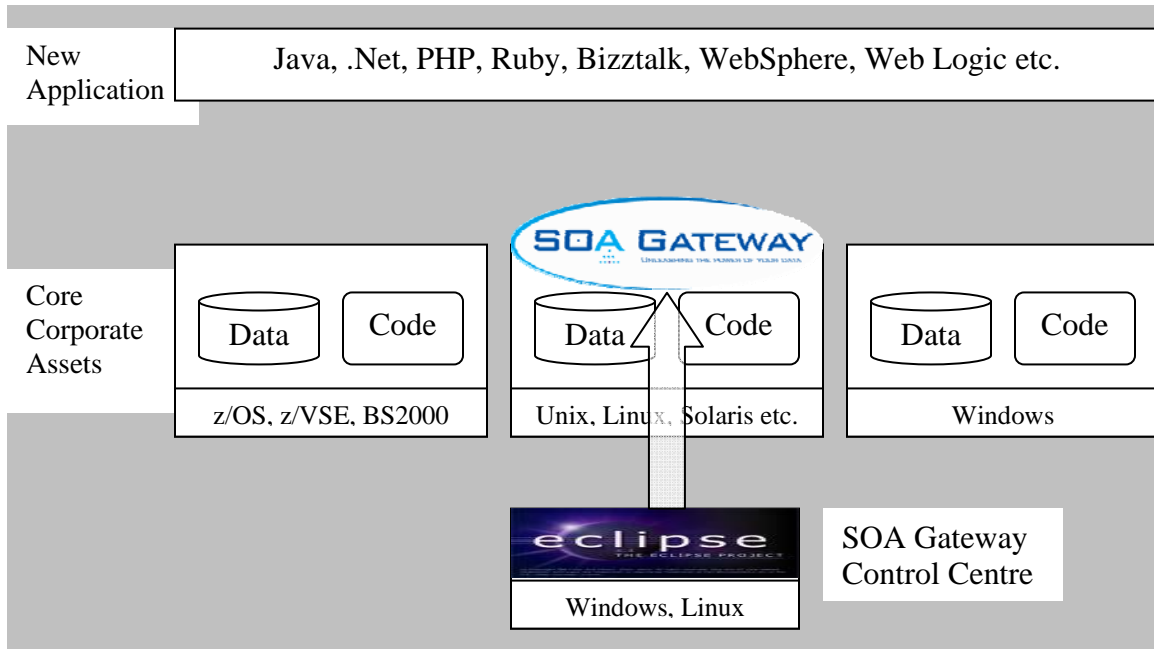
Note that the Eclipse running on the Windows server is only required for installation. This server can subsequently be managed and configured from a remote administrators PC in the same way as other platforms.

Other Platform Installation

On all other platforms, the SOA Gateway Control Centre will FTP the required installation materials to the target system.



Once the FTP has been completed, you must logon to the target system to run a short script or a number of jobs to complete the installation process. These are documented in the installation documentation for the platform where you are installing the SOA Gateway Server. Once this has been completed, return to the control centre to complete the process.



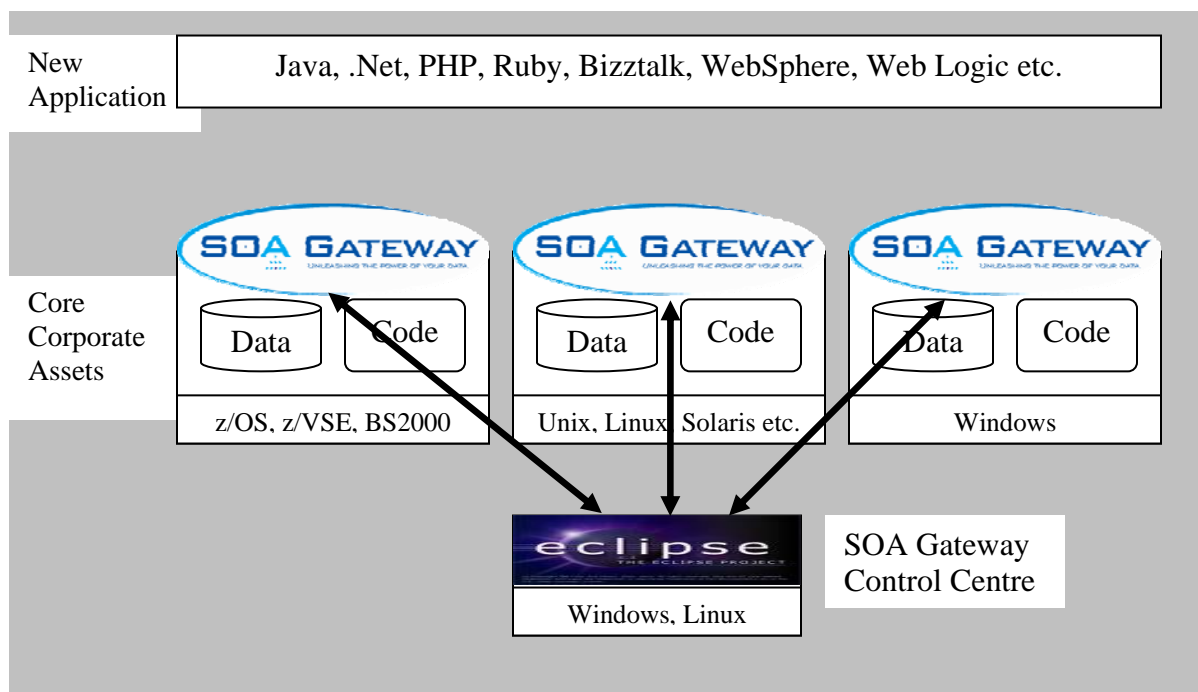
Common Configuration Steps

Once the SOA Gateway Server is running, it is possible to test if the Control Centre can communicate with it from the current screen in the deployment wizard. Once this communication is ok, you just need to hit the configure button. This will install and configure each of the licensed SOA Gateway data source drivers in your server environment. Where additional installation specific information is required, this will be requested during this process. Please refer to the documentation for more details on what may be required for each of the data source drivers.

Once the configuration step has been completed, you are ready to start creating services.

Supporting Multiple Platforms and Operating Systems

It is possible to deploy and install the SOA Gateway server on multiple machines where access is required while monitoring these from the one administrators PC as per the following architecture:



3.2. Creating the Services

The creation of services is achieved from the SOA Gateway Control Centre and is a 3 step process.

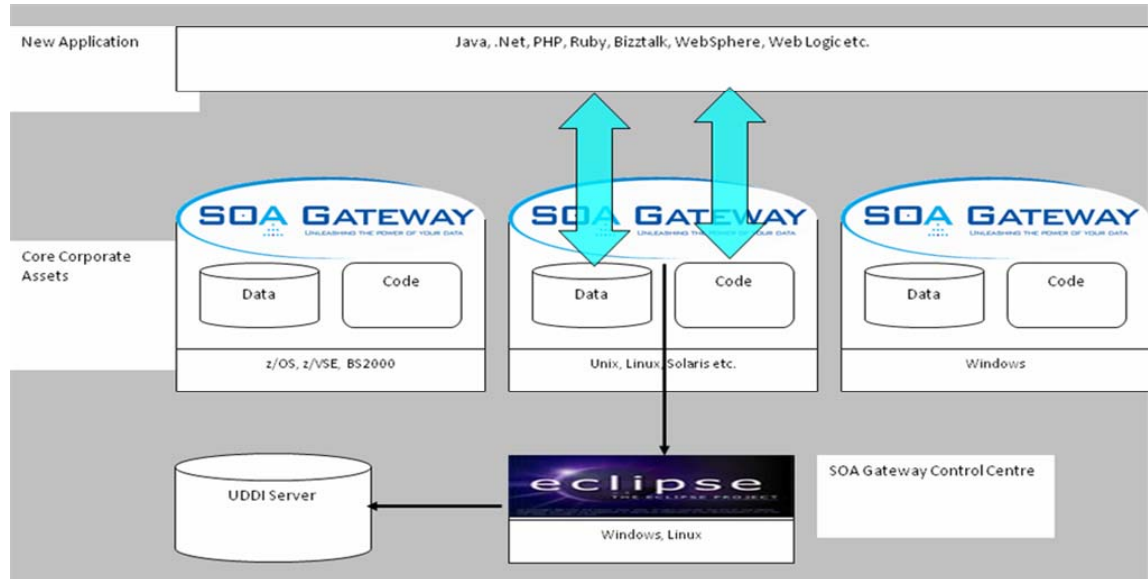
1. The SOA Gateway can discover what resources are available for a specific data source for which services can be created.
2. The Meta data for those resources is identified and used to create what is required by the SOA Gateway.
3. The service definition is deployed to the SOA Gateway Server and is ready for use.

Risaris Limited also recommend an additional step which is the registration of the WSDL in a UDDI server such as CentraSite from Software AG, the Systinet registry from HP or the OpenUDDI server available as open source, however, this is not required to use the service.

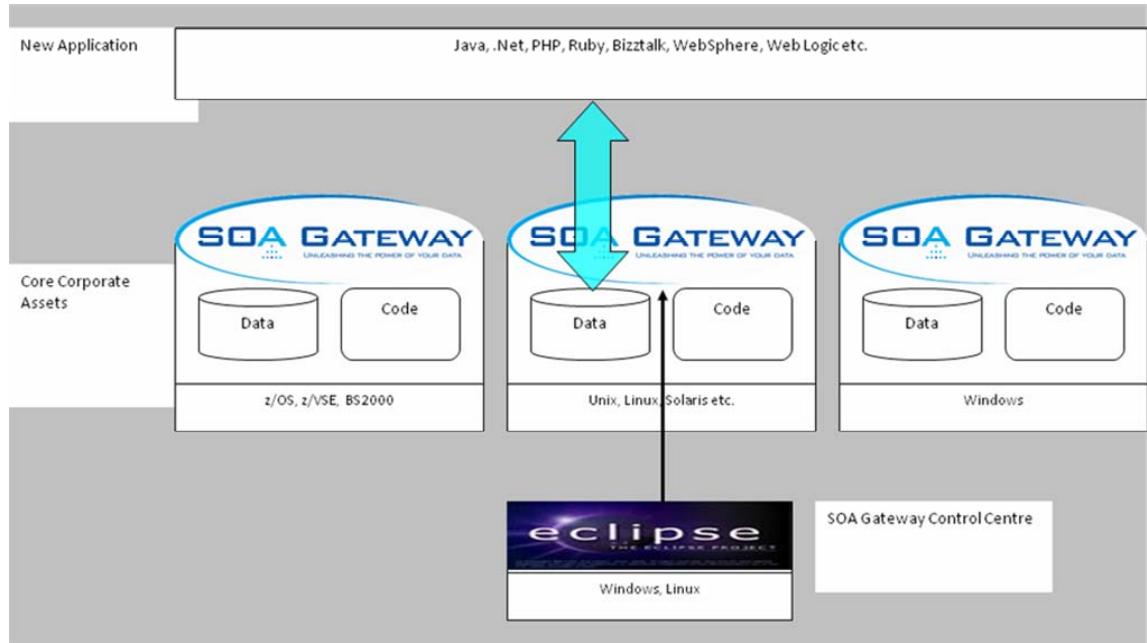
3.2.1. Creating Database Services

Database services are created by simply following these steps:

1. Identify the database from which you wish to create services.
2. Provide the database name.
3. The SOA Gateway Server will return a list of tables or files available on that database as per the following:



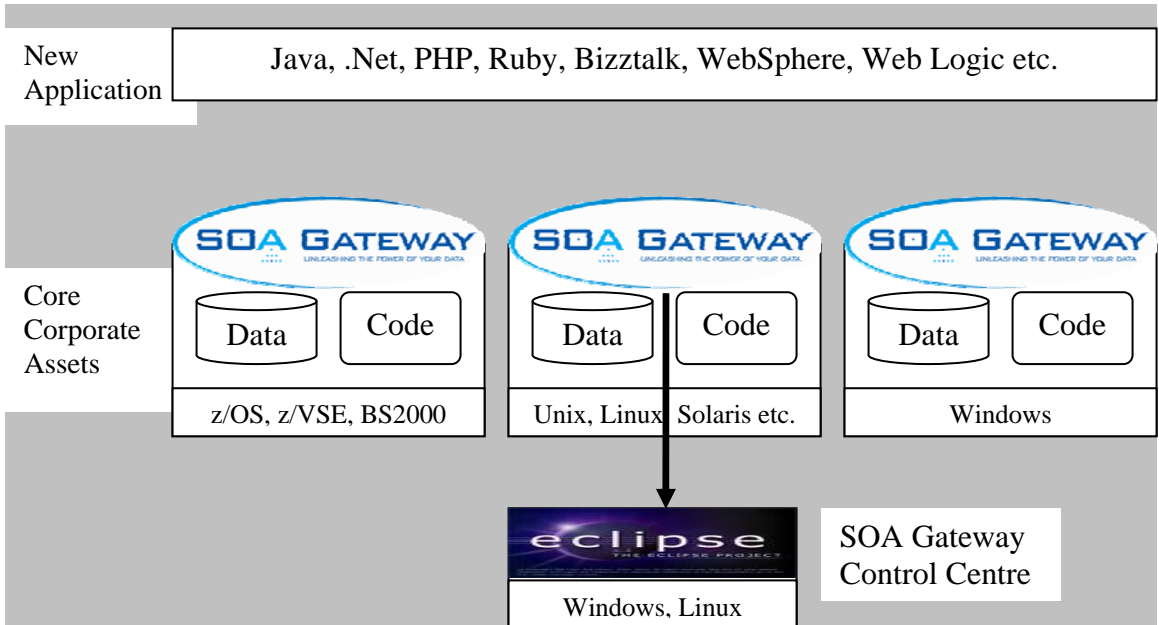
4. Select the tables for which you wish services to be created and hit the continue button.
5. The wizard will create services for each of the tables you selected and deploy these services to the SOA Gateway Server. These services are now available for use.



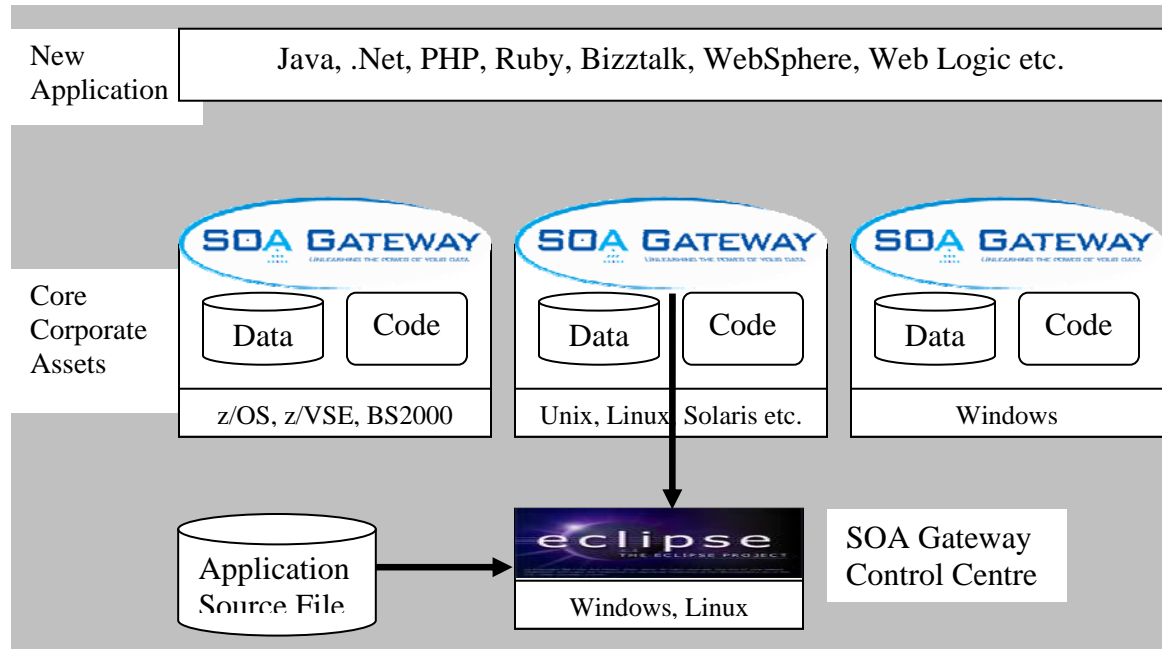
3.2.2. Creating Business Logic Services

Business logic services are created by simply following these steps:

1. Identify where the application which provides the business logic is implemented (e.g. Natural program, CICS application, Windows DLL etc.)
2. Provide the location of the application.
3. The SOA Gateway Server will return a list of applications available at that location.



4. Select the applications for which you wish services to be created and hit the continue button.
5. Provide the source file for each service to be created.

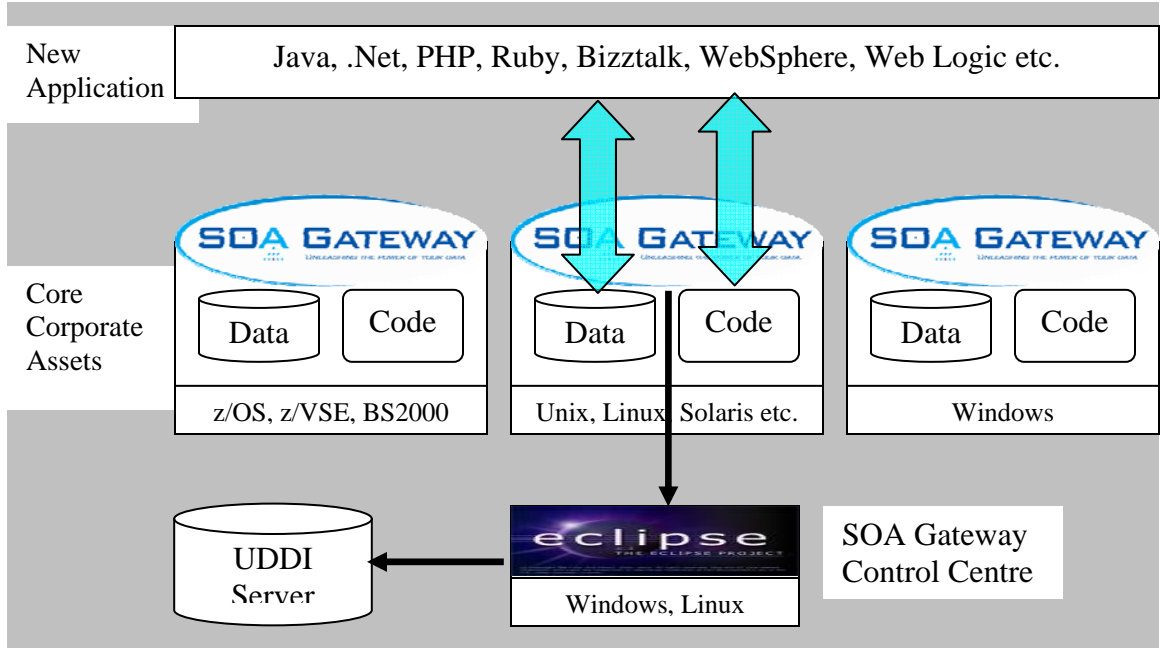


6. The wizard will create services for each of the applications you selected and deploy them to the SOA Gateway Server.
7. Risaris recommend that you review and modify the input only, output only and input/output fields for each service based on your knowledge of the application requirements.
8. These services are now available.

3.2.3. Registering Services in a UDDI Server

The services you have been created can be registered with a UDDI server as follows:

1. Define your UDDI server to the SOA Gateway Control Centre (must only be done once).
2. Select the SOA Gateway services to be registered.
3. Provide the information required by the control centre Wizard until the registration is complete.



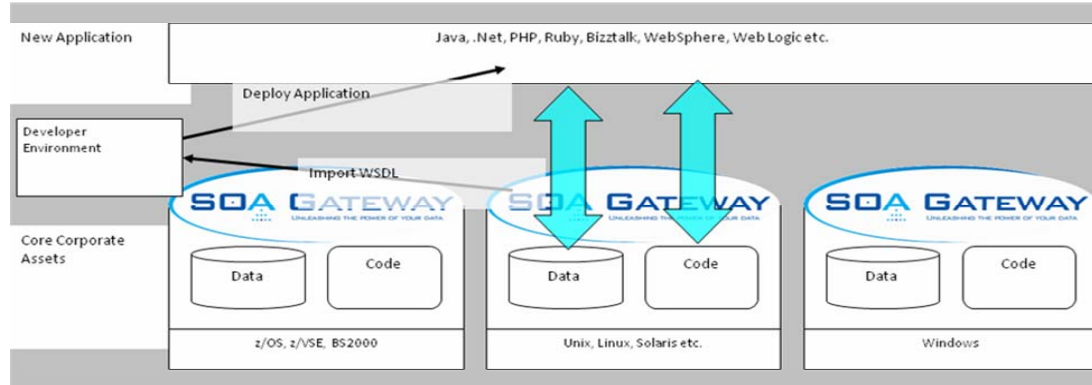
4. This must be repeated for each service you wish to register.

3.3. Using the Services in your project

How the services are used will depend on whether you have used a UDDI server or not.

3.3.1. Using the Services Directly (without a UDDI Server)

1. The application developer is provided with a WSDL location.
2. The application developer will import the WSDL from the SOA Gateway server into their project.



3. The service is now available for use from the project.

3.3.2. Using the Services from a UDDI Server

1. The application developer is provided with the location of the UDDI server.
2. The application developer selects from the UDDI Server the service that they wish to use.
3. The UDDI server provides the location of the WSDL.

4. The application developer will import the WSDL from the SOA Gateway server into their project.
5. The service is now available for use from the project.

