

Troubleshooting Guide: SAP NetWeaver Gateway

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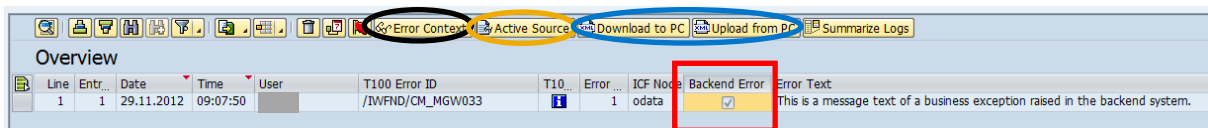
Error Occurred – What to do?

Situation:

You have encountered an error and you want to solve it.

Therefore, open the Error Log (transaction: /iwfnd/error_log):

Error Log



You can see a short error description in the *Error Text* field. For further information / functionality, click one of the following buttons.

Select the line with the error you are interested in and choose *Error Context* (marked black), *Active Source* (orange) or *Download to PC/Upload from PC* (blue).

If the error occurred in the SAP Business Suite backend system, select the *Backend Error* checkbox. For more information about how to handle such errors, see below.

Active Source:

The *Active Source* button enables you to navigate directly to the source code where the error occurred and the exception rose.

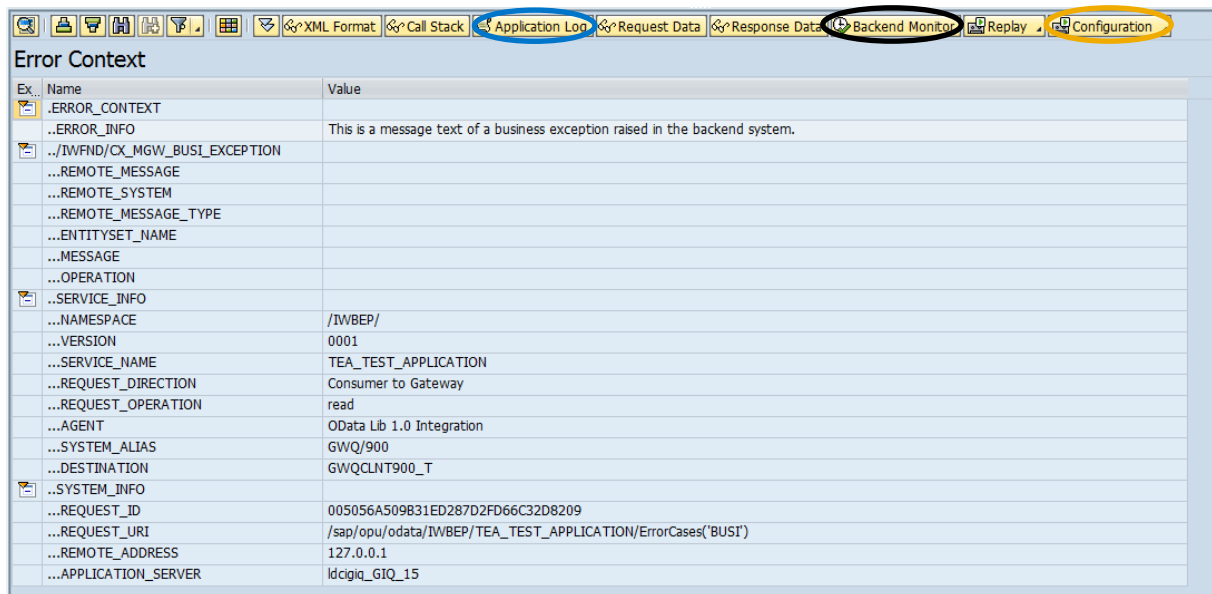
You can check if the error rose in your source code or if it was implemented by someone else. Furthermore, you can set a breakpoint to retrace the error.

Download to PC / Upload from PC:

If you are not able to solve the problem by yourself, you can download the error description by choosing the *Download to PC* button. You can then create a customer message for SAP and attach the error description. The attachment provides support colleagues with important context information they require to solve the problem. The error description is much more helpful than a screenshot of the error log entry.

Alternatively, you can upload the error description to another system in order to check it there.

Error Context



Ex.	Name	Value
	..ERROR_CONTEXT	
	..ERROR_INFO	This is a message text of a business exception raised in the backend system.
	..IWFND/CX_MGW_BUSI_EXCEPTION	
	...REMOTE_MESSAGE	
	...REMOTE_SYSTEM	
	...REMOTE_MESSAGE_TYPE	
	...ENTITYSET_NAME	
	...MESSAGE	
	...OPERATION	
	..SERVICE_INFO	
	...NAMESPACE	/IWBEP/
	...VERSION	0001
	...SERVICE_NAME	TEA_TEST_APPLICATION
	...REQUEST_DIRECTION	Consumer to Gateway
	...REQUEST_OPERATION	read
	...AGENT	OData Lib 1.0 Integration
	...SYSTEM_ALIAS	GWQ/900
	...DESTINATION	GWQCLNT900_T
	..SYSTEM_INFO	
	...REQUEST_ID	005056A509B31ED287D2FD66C32D8209
	...REQUEST_URI	/sap/opu/odata/IWBEP/TEA_TEST_APPLICATION/ErrorCases("BUSI")
	...REMOTE_ADDRESS	127.0.0.1
	...APPLICATION_SERVER	ldcigiq_GIQ_15

The Error Context provides detailed information about the error that occurred.

- **Error_Info:** shows a description of the error
- **Namespace:** shows the namespace in which the error occurred. It is important to ascertain whether the error occurred in the SAP Business Suite backend system or in the SAP NetWeaver Gateway hub system.
- **System_Alias:** shows the system and client in which the error occurred

Backend Monitor:

If the error occurred in the SAP Business Suite backend system, you can view the Error Log in the backend system by choosing *Backend Monitor*.

The Error Log in the backend system looks just like the Error Log in the SAP NetWeaver Gateway hub system, but it includes some additional information in the Error Context.

Configuration:

The *Configuration* button helps you overcome service-related problems. Two different errors are possible:

- Service not implemented
- Service erroneous

If the service has not yet been implemented, you have to choose the *Service Implementation* option when you press the *Configuration* button. You will be redirected to the according transaction in the SAP Business Suite backend system.

If the service has already been implemented, but contains an error or is not active, you have to choose the *Maintain Service* option when you press the *Configuration* button.

Application Log:

The Application Log is only required in rarer cases. If the Error Log does not contain the information you need to solve the error, you can access the Application Log (marked blue):

External ID of the Log	Nu...	Alterm ID	GSDO Type	Operation	Direction	Object	Subobject	Date	Time (CE...	Log no.
005056A509B31ED287D2FD66C32D8209	6			read	Consumer to Gate...	/IWFND/	RUNTIM	R. 25.10.2012	13:34:20	00000000000000186122

Msg.	Message Text	Ltxt	Det.	SAP System Alias	Prev ...	Error Code
1	Only Error, Security and Warning messages of this request will be logged					/IWFND/CM_LOGGING032
2	User ' ' is not assigned to any role					/IWFND/CM_COS006
3	An exception has occurred					SY530
4	An exception has occurred					SY530
5	Exception of type /IWFND/CX_SODATA has occurred. See details for more information					/IWFND/CM_LOGGING006
6	Exception of type /IWCOR/CX_DS_BAD_REQUEST has occurred. See details for more information					/IWFND/CM_LOGGING006

The Application Log shows you the steps processed when the request was executed. Each line represents one step of the request execution. Additionally, you can see a traffic light in front of every line to see where the error occurred. In this case this would be line 3.

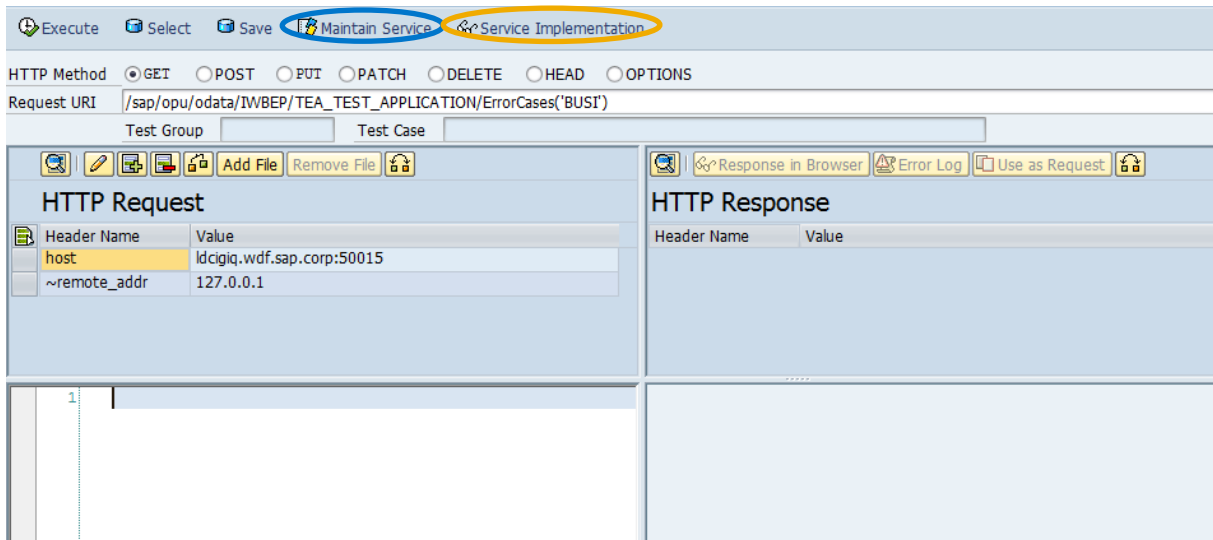
Lines with *green lights* have been executed successful. *Yellow lights* indicate a problem, while *red lights* mark erroneous execution steps.

Replay the Error in Gateway Client

Ex.	Name	Value
	..ERROR_CONTEXT	
	..ERROR_INFO	This is a message text of a business exception raised in the backend system.
	..IWFND/CX_MGW_BUSI_EXCEPTION	
	...REMOTE_MESSAGE	
	...REMOTE_SYSTEM	
	...REMOTE_MESSAGE_TYPE	
	...ENTITYSET_NAME	
	...MESSAGE	
	...OPERATION	
	..SERVICE_INFO	
	...NAMESPACE	/IWBEP/
	...VERSION	0001
	...SERVICE_NAME	TEA_TEST_APPLICATION
	...REQUEST_DIRECTION	Consumer to Gateway
	...REQUEST_OPERATION	read
	...AGENT	OData Lib 1.0 Integration
	...SYSTEM_ALIAS	GWQ/900
	...DESTINATION	GWQCLNT900_T
	..SYSTEM_INFO	
	...REQUEST_ID	005056A509B31ED287D2FD66C32D8209
	...REQUEST_URI	/sap/opu/odata/IWBEP/TEA_TEST_APPLICATION/ErrorCases('BUSI')
	...REMOTE_ADDRESS	127.0.0.1
	...APPLICATION_SERVER	ldcigq_GIQ_15

After finding a solution to the problem, you can check the solution by clicking *Replay* and choosing the option *Gateway Client* in order to check the solution.

Gateway Client starts automatically where the error context is reproduced and preset.

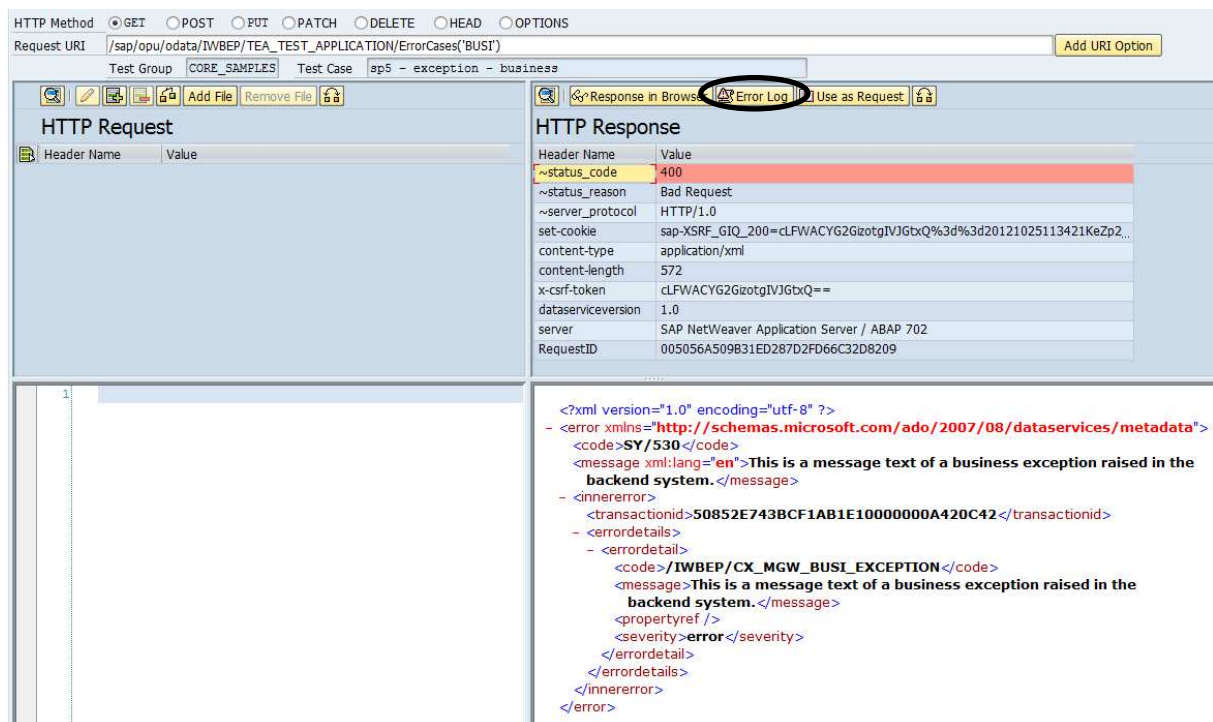


The HTTP method, request URI, and headers are filled in the Gateway Client.

Execute the request by pressing *Execute* and the HTTP response is displayed in the HTTP Response pane.

If the error has been resolved, a successful response is displayed. If an error occurs, you have several options to solve it.

If the problem is service related, the Gateway Client allows you to maintain the service of the URI by clicking on the corresponding button (marked blue). Furthermore, you can check and correct the service implementation (marked orange). These buttons are already described under “Configuration”.



Although the Gateway Client already provides some information about the error, you can navigate directly to the Error Log again to see more information. To do this, choose *Error Log* (marked black).

The Gateway Client returns a status code and the corresponding status reason. In this example, it is a *400 Bad Request* error.

The Gateway Client enables you to check if the changes you have implemented in the source code have been successful thanks to it's the fast processing times and minimum effort involved.

Gateway Client

The Gateway Client (transaction /IWFND/GW_CLIENT) for SAP NetWeaver Gateway is a powerful tool that enhances the existing Error Log. While the Error Log provides you with an overview of detailed context information about errors that have occurred at runtime and enables you to navigate easily to the affected source code, the Gateway Client allows you to reproduce the exact runtime situation that led to a particular error. In such cases, you can launch the Gateway Client from the Error Log context screen to replay all the steps that led to the error. In addition, however, the Gateway Client provides you with the freedom to test a service before runtime errors actually arise. This enables you to test your service pro-actively and run a quality assurance test before a service is used by a mobile application, for example.

In short, Gateway Client enables you to:

- Reproduce (replay) runtime situations that led to a particular error (reactive error resolution).
- Simulate a service at runtime to identify and resolve potential issues before a critical showdown arises (proactive error prevention).

HTTP Requests and Responses

The Gateway Client enables you to test HTTP responses as they would arise at runtime. To test an HTTP response, proceed as follows:

1. Select the HTTP method (GET, POST, DELETE, HEAD, OPTIONS, PUT, PATCH) you want to use.
2. Enter the request URI you want to test in the *Request URI* input field or upload the service data you want to test from a local file, for example. To upload a file, choose *Add File* in the *HTTP Request* frame on the left-hand side of the screen. The header name and value (file type, for example, .xml, .pdf, .jpg) of the HTTP request is displayed in a table and, below this, you can see a preview of the HTTP request file itself. To remove the file from the HTTP request, choose *Remove File*.



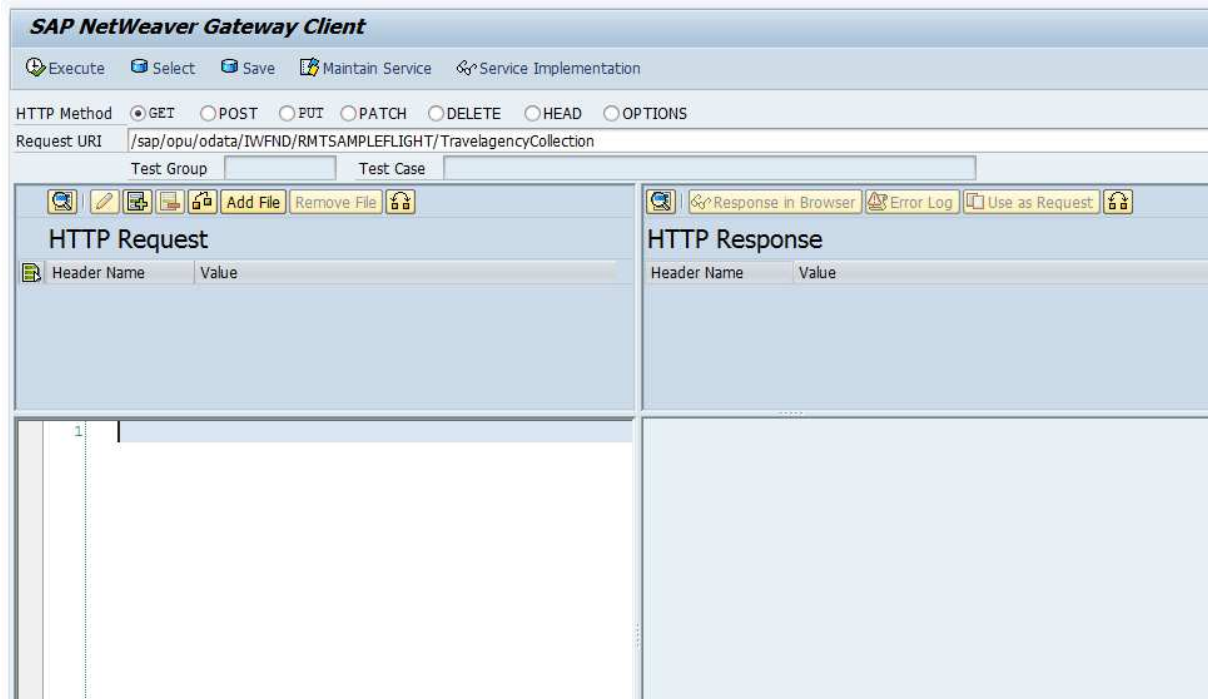
Note

If you have uploaded an XML file, you can check the request XML for accuracy before you run the test and see the HTTP response.

3. Choose *Execute*.
4. The Gateway Client displays the HTTP response in the *HTTP Response* frame on the right-hand side of the screen. If an error arises as a result of the test, the HTTP status and value is displayed in a table above the preview field. You can display details of

the HTTP response, display the response in an additional browser window, or navigate to the Error Log to correct the error.

For greater usability, the Gateway Client enables you to download XML requests from the Gateway Client to your local PC or vice versa to upload an XML request from your local PC.



Database Integration: Working with Test Cases

The Gateway Client is integrated with an underlying database, thereby providing you with increased flexibility to access request data already stored in the database for further testing, or save your own test cases to the database as required. This can save time and effort if you want to execute test cases more than once.

- To save your request to the database, choose *Save*. In the *Save Request to Database* dialog box, enter a test group and a name for the new test case.
- To select an existing test case from the database, choose *Select*. In the *Select Test Cases* dialog box, you can enter the namespace in which the service you want to test resides, for example, */IWBEP/*, and an existing service name, an existing test group, or test case. Choose *Enter*.



Note

If the test case you entered does not yet exist in the database, you can choose to create a default test case.

If more than one test case exists based on the criteria you entered in the *Select Test Cases* dialog box, the test cases are displayed on the *SAP NetWeaver Gateway Client — Select*

from Database screen. The Gateway Client lists test cases found in the database together with the name of the test group, test case name, HTTP method, request URI, and the user who last changed the particular test case. Select the line in which the relevant test case is displayed and choose *Request Data* to display the HTTP request or choose *Execute* to run the test. If required, you can select more than one test case and run the test in parallel.

- If you want to enter new criteria to search for test cases, choose *Re-Select*.

SAP NetWeaver Gateway Client - Select from Database

Re-Select

Request Data Execute

Test Cases

Line	Test Group	Test Case	HTTP Method	Request URI	Changed by
1	DEFAULT	TEA_TEST_APPLICATION - Entry Set - Read	GET	/sap/opu/odata/IWBEP/TEA_TEST_APPLICATION/Teams	
2		TEA_TEST_APPLICATION - Service Document	GET	/sap/opu/odata/IWBEP/TEA_TEST_APPLICATION/	
3		TEA_TEST_APPLICATION - Service Metadata	GET	/sap/opu/odata/IWBEP/TEA_TEST_APPLICATION/\$metadata	
4	DEFAULT_CM	TEA_TEST_APPLICATION - Entry Set - Read	GET	/sap/opu/sdata/IWBEP/TEA_TEST_APPLICATION/Teams	
5		TEA_TEST_APPLICATION - Service Document	GET	/sap/opu/sdata/IWBEP/TEA_TEST_APPLICATION/	
6		TEA_TEST_APPLICATION - Service Metadata	GET	/sap/opu/sdata/IWBEP/TEA_TEST_APPLICATION/\$metadata	

Interpreting the Test Results

After you have run the test for one or more test cases, the results are displayed in a table on the *SAP NetWeaver Gateway Client — Multiple Test* screen. At a glance, you can see the status of the test indicated by a traffic light icon together with the date and time the test was run, the HTTP status code, and the corresponding status text. On this screen, you can choose to display the request or response data for more context information.

If errors arose, you can select the affected test case and choose *Error Log* to correct the issue. You can also test the test case again by choosing *Re-Test*.

SAP NetWeaver Gateway Client - Multiple Test

Request Data Response Data Error Log Re-Test

Test Results

Line	Status	Date	Time	Test Group	Test Case	HTTP Method	HTTP Status Code	Error Text
1	🚫	27.04.2012	09:49:05	DEFAULT	TEA_TEST_APPLICATION - Entry Set - Read	GET	500	HTTP Status Code 500 (Internal Server Error)
2	🚫				TEA_TEST_APPLICATION - Service Document	GET	500	HTTP Status Code 500 (Internal Server Error)

HTML Status Codes

Successful 2xx

This class of status code indicates that the client's request was successfully received, understood, and accepted.

- **200 OK**
 - The request has succeeded. The information returned with the response is dependent on the method used in the request, for example:
 - GET an entity corresponding to the requested resource is sent in the response;
 - HEAD the entity-header fields corresponding to the requested resource are sent in the response without any message-body;
 - POST an entity describing or containing the result of the action
- **201 Created**
 - The request has been fulfilled and resulted in a new resource being created. The newly created resource can be referenced by the URI(s) returned in the entity of the response, with the most specific URI for the resource given by a Location header field.
- **202 Accepted**
 - The request has been accepted for processing, but the processing has not been completed. The request might or might not eventually be acted upon, as it might not be allowed when processing takes place. There is no facility for re-sending a status code from an asynchronous operation such as this.
 - The 202 response is intentionally non-committal. Its purpose is to allow a server to accept a request for some other process (perhaps a batch-oriented process that is only run once per day) without requiring that the user agent's connection to the server persist until the process is completed.
- **204 No Content**
 - The server has fulfilled the request but does not need to return an entity-body, and might want to return updated meta information.

Client Error 4xx

The 4xx class of status code is intended for cases in which the client seems to have erred.

- **400 Bad Request**
 - The request could not be understood by the server due to malformed syntax. The client should not repeat the request without modifications.
 - Examples:
 - GET: Resource not found

- If this error occurs, the request has been sent with an invalid URI. Check the Syntax of the URI.
 - POST: Duplicate resource
 - If this error occurs, the desired key does already exist in the database. You cannot implement different data with the same key.
- **401 Unauthorized**
 - The request requires user authentication. The response must include a WWW-Authenticate header field containing a challenge applicable to the requested resource. The client MAY repeat the request with a suitable Authorization header field. If the request already included Authorization credentials, then the 401 response indicates that authorization has been refused for those credentials.
 - Example:
 - GET: Logon failed
 - If this error occurs, either the provided user name or password is invalid, therefore the login failed. Check your login credentials.
- **403 Forbidden**
 - The server understood the request, but is refusing to fulfill it. The user does not have the authorization and the request should not be repeated.
 - Example:
 - GET: No authorization to access service
 - If this error occurs, the user does not have the necessary authorization to execute the request. Request authorization at user administration.
- **404 Not Found**
 - The server has not found anything matching the Request URI. No indication is given of whether the condition is temporary or permanent.
 - Examples:
 - GET: Resource not found
 - If this error occurs, the request has been sent with an invalid data key. The data you wanted to receive does not exist in the database.
 - PUT: Resource not found
 - If this error occurs, the request has been sent with an invalid data key. The data you wanted to update does not exist in the database.
- **405 Method Not Allowed**
 - The method specified in the Request-Line is not allowed for the resource identified by the Request-URI. The response must include an Allow header containing a list of valid methods for the requested resource.
- **408 Request Timeout**
 - The client did not produce a request within the time that the server was prepared to wait. The client may repeat the request without modifications at any later time.
- **412 Precondition Failed**

- The precondition given in one or more of the request-header fields evaluated to be false when it was tested on the server. This response code allows the client to place preconditions on the current resource metainformation (header field data) and thus prevent the requested method from being applied to a resource other than the one intended.
- Example:
 - GET: User is not authorized to read business document
 - If this error occurs, the User is not allowed to process the request, because the RequestID is assigned to another User. Use another RequestID to overcome this problem.
- **415 Unsupported Media Type**
 - The server is refusing to service the request because the entity of the request is in a format not supported by the requested resource for the requested method.

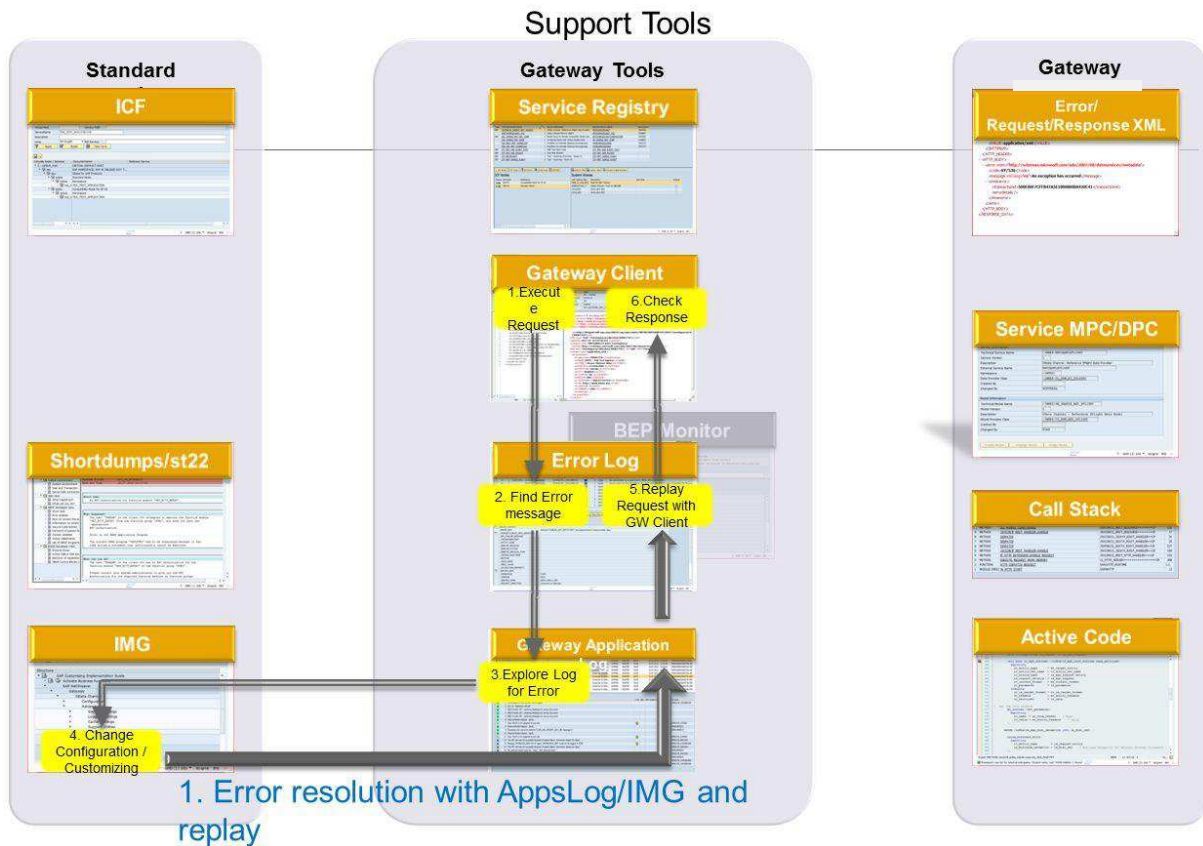
Server Error 5xx

Response status codes beginning with the digit "5" indicate cases in which the server is aware that it has erred or is incapable of performing the request. Except when responding to a HEAD request, the server should include an entity containing an explanation of the error situation, and whether it is a temporary or permanent condition. User agents should display any included entity to the user. These response codes are applicable to any request method.

- **500 Internal Server Error**
 - The server encountered an unexpected condition which prevented it from fulfilling the request.
 - Example:
 - GET: Method 'XYZ' not implemented in data provider class
 - If this error occurs, the request has caused an Internal Server Error. Due to this dump, the execution stopped. Check the Error Log of the Hub and ST22 in Hub and Backend for further analysis.
- **502 Bad Gateway**
 - The server, while acting as a gateway or proxy, received an invalid response from the upstream server it accessed in attempting to fulfill the request.
- **503 Service Unavailable**
 - The server is currently unable to handle the request due to a temporary overloading or maintenance of the server. The implication is that this is a temporary condition which will be alleviated after some delay.
- **504 Gateway Timeout**
 - The server, while acting as a gateway or proxy, did not receive a timely response from the upstream server specified by the URI (e.g. HTTP, FTP, LDAP) or some other auxiliary server (e.g. DNS) it needed to access in attempting to complete the request.

Possible Approaches

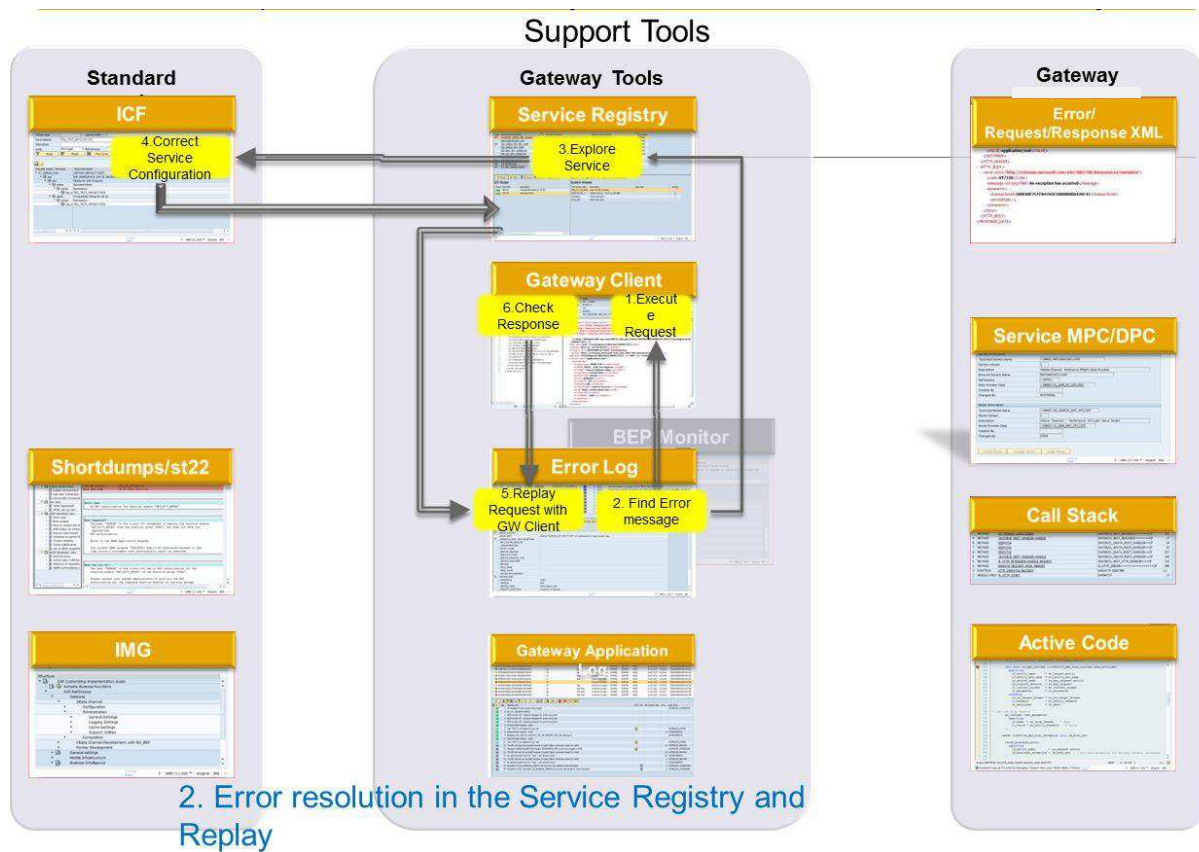
Error resolution with Application Log / IMG and replay



There are six steps to resolve an error with Application Log / IMG:

1. Execute request in Gateway Client
2. Find the error message in the Error Log
3. Explore the log for the error in Gateway Application Log
4. Change the configuration / Customizing settings in the IMG
5. Replay the request with Gateway Client
6. Check response

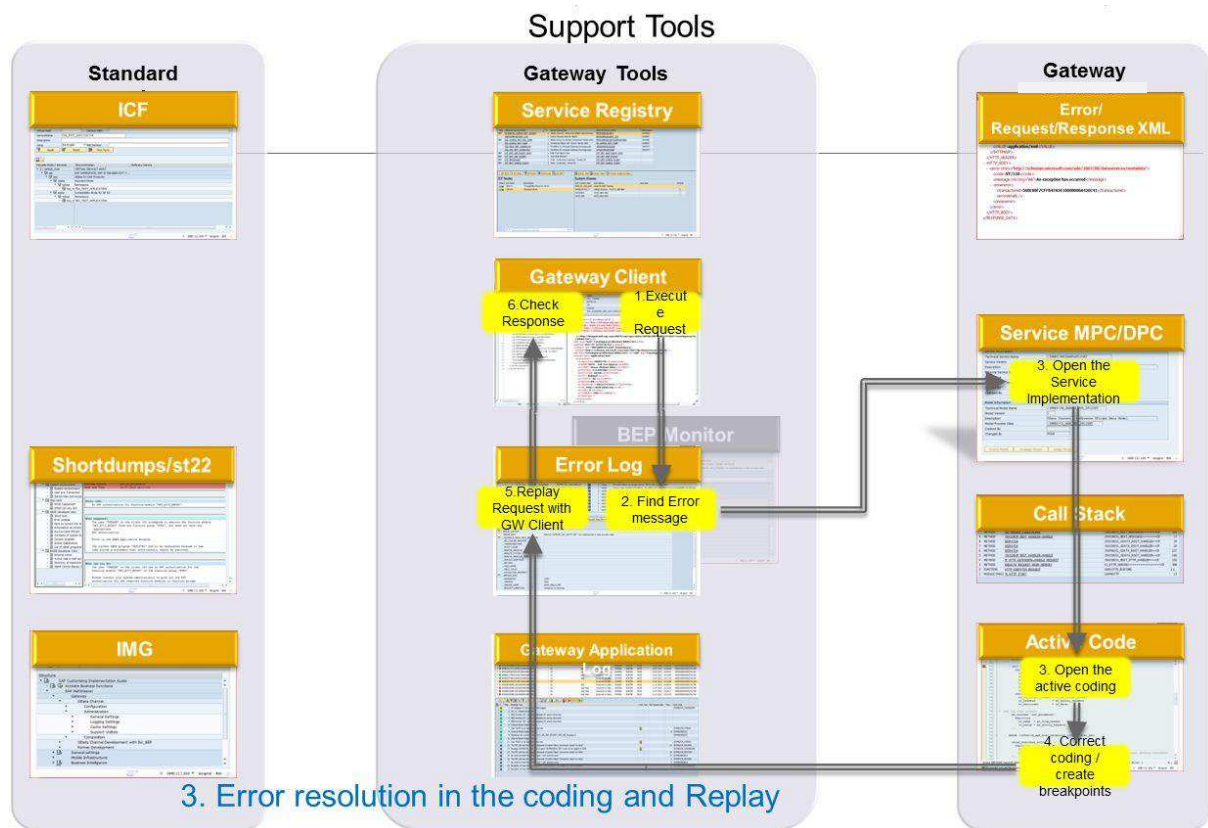
Error resolution in the Service Registry and replay



There are six steps to resolve an error in the Service Registry (Activate and Maintain Services):

1. Execute request in GW Client
2. Find the error message in the Error Log
3. Explore the Service in the Service Registry
4. Correct the Service Configuration in ICF
5. Replay the request with GW Client
6. Check response

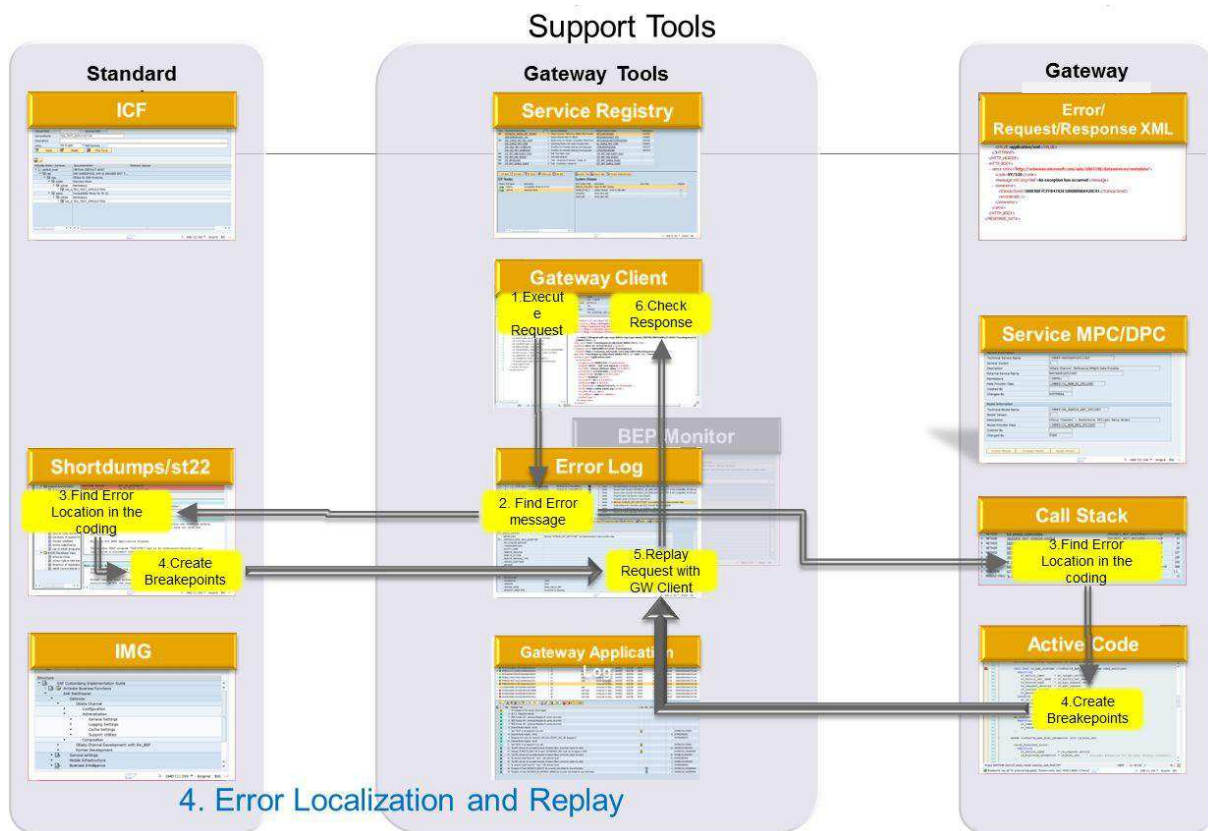
Error resolution in the coding and replay



There are seven steps to resolve an error in the coding:

1. Execute the request in GW Client
2. Find the error message in the Error Log
3. Open the Service Implementation in Service MPC/DPC
4. Open the active coding
5. Correct the coding / create breakpoints
6. Replay the request with GW Client
7. Check response.

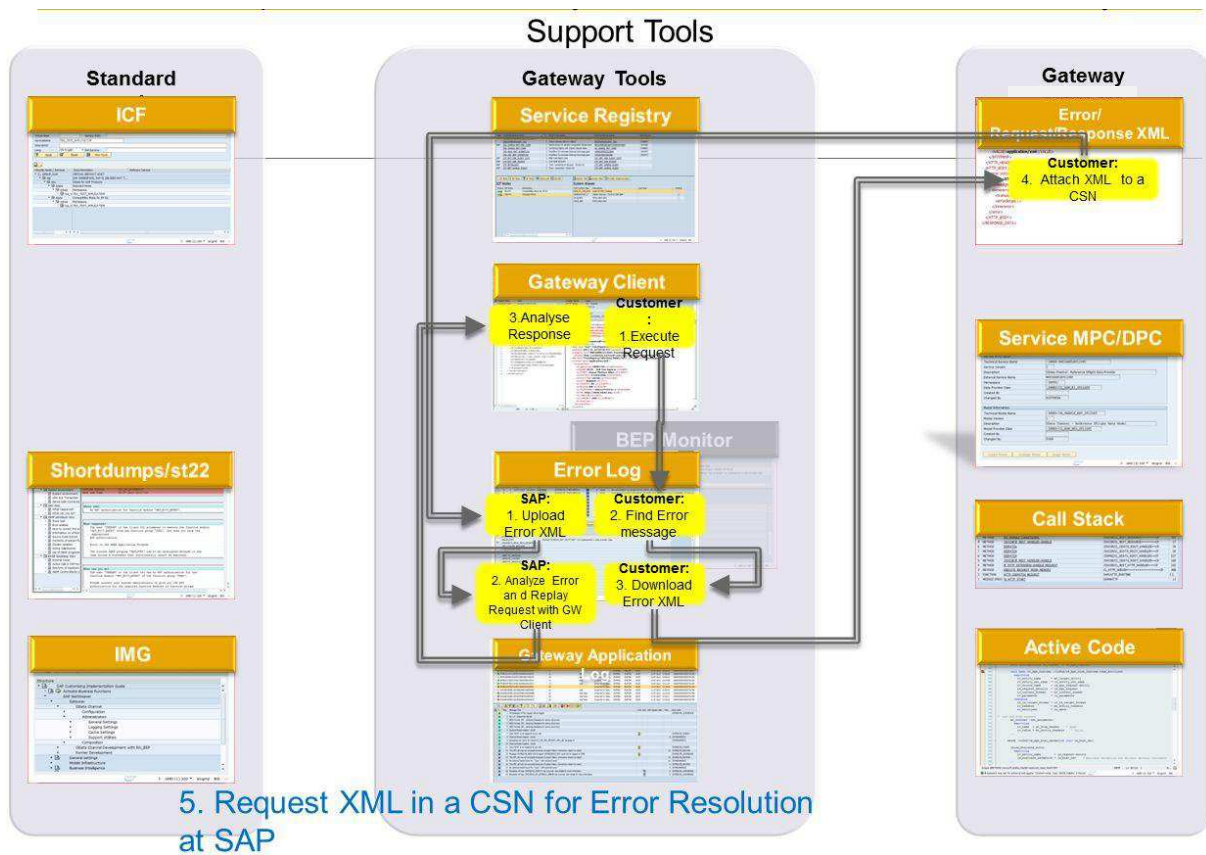
Error localization and replay



There are two different ways to localize an error:

1. Execute the request in GW Client
2. Find the error message in the Error Log
3. Possible ways:
 - a. 1st possibility:
 - i. Find error location in the coding via Shortdumps (Transaction: st22)
 - ii. Create Breakpoints
 - b. 2nd possibility:
 - i. Find error location in the coding via Call Stake
 - ii. Create Breakpoints
4. Replay the request with GW Client
5. Check response.

Request XML in a problem ticket for Error Resolution at SAP



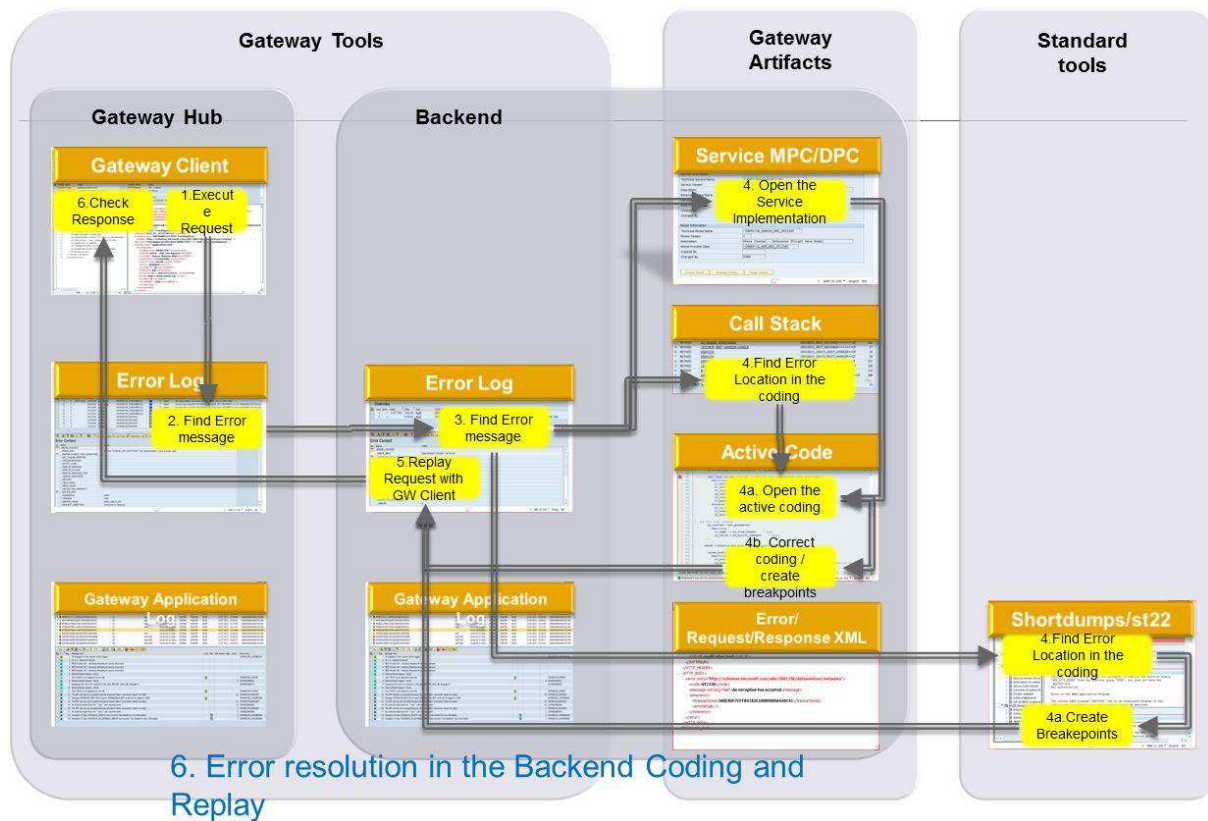
How a customer sends an error message via XML:

1. Customer executes the request
2. Customer finds the error message in the Error Log
3. Customer downloads the error message as XML file
4. Customer attaches the XML to a problem ticket

How to handle such a problem ticket:

1. Upload Error XML in the Error Log
2. Analyze error and replay the request with GW Client
3. Analyze response in GW Client

Error resolution in the Backend Coding and replay



There are several ways to resolve an error in the Backend coding:

1. Execute the request in the GW Client in the Hub-System
2. Find the error message in the Error Log in the Hub-System
3. Find the error message in the Error Log in the Backend-System
4. Possible ways:
 - a. 1st possibility:
 - i. Open the Service Implementation in Service MPC/DPC in the Backend-System
 - ii. Open the active coding in the Backend-System
 - iii. Correct the coding / create Breakpoints in the Backend-System
 - b. 2nd possibility:
 - i. Find the error location in the Call Stack in the Backend-System
 - ii. Open the active coding in the Backend-System
 - iii. Correct the coding / create Breakpoints in the Backend-System
 - c. 3rd possibility:
 - i. Find the error location in the Shortdumps (Transaction: st22)
 - ii. Create Breakpoints
5. Replay the request with GW Client in the Backend-System

Check response.

Documentation

Error Log:

http://help.sap.com/saphelp_gateway20sp06/helpdata/en/d4/8614377c394bd492edbde3295a518e/frameset.htm

Configuration settings for Error Log:

http://help.sap.com/saphelp_gateway20sp06/helpdata/en/a6/14fd9101374e6bb1f3ca3b4aa7172a/frameset.htm

Gateway Client:

http://help.sap.com/saphelp_gateway20sp06/helpdata/en/84/cdd122239d4dd0bee1da7fe4a16850/frameset.htm

Application Log:

http://help.sap.com/saphelp_gateway20sp06/helpdata/en/d8/8afed0c41e4c4593b5ecd48e8f2f76/frameset.htm

Notification Monitor:

http://help.sap.com/saphelp_gateway20sp06/helpdata/en/ef/73d8be7c7f4a10b87e69afce9f5575/frameset.htm

Service Registry – Activate and Maintain Services:

http://help.sap.com/saphelp_gateway20sp06/helpdata/en/56/cb9c43787b468b856a321edb63d611/frameset.htm

IMG:

http://help.sap.com/saphelp_gateway20sp06/helpdata/en/a1/bdaae2b2a94dd5bcb987638f5337e4/frameset.htm