Domains Supplied with Natural Business Services

Natural Business Services uses several business services supplied in the INTERNAL and ADMIN domains. You can also take advantage of these services, as well as those in the DEMO domain.

This section covers the following topics:

- ADMIN Domain

- DEMO Domain

- INTERNAL Domain

ADMIN Domain

Natural Business Services supplies a group of business services that are only required by an administrator. These business services allow the consumer to grant security to the appropriate groups of users and perform other tasks, including:

- Check audit trails

- Deploy services

- Modify security information

This section describes the business services contained in the ADMIN domain:

- BusinessServicesAuditTrail (Version 010101)

- BusinessServicesMethodAuditTrail (Version 010101)

- Domain (Version 010101)

- DomainAuditTrail (Version 010101)

- Deployment (Version 010101)

- Group (Version 010101)

- GroupLevelSecurity (Version 010101)

- MethodLevelSecurity (Version 010101)

- SecurityExceptionsReport (Version 010101)

- SecurityPermissionsReport (Version 010101)

- StepLibraryAuditTrail (Version 010101)

- ServiceLevelSecurity (Version 010101)

BusinessServicesAuditTrail (Version 010101)

This service retrieves a record of changes to business services in descending order. It has the following methods:

Method Name	Description
FindByDateTimeDomainDesc	Retrieves a record of changes to business services in descending order by date, time, and domain.
FindByDomainServiceVrsDateDesc	Retrieves a record of changes to business services in descending order by domain, service, version, date, and time.

BusinessServicesMethodAuditTrail (Version 010101)

This service retrieves a record of changes to service methods in descending order. It has the following methods:

Method Name	Description
FindByDateTimeDomainDesc	Retrieves a record of changes to service methods in descending order by date, time, and domain.
FindByDomainServiceVrsDateDesc	Retrieves a record of changes to service methods in descending order by domain, service, version, date, and time.

Domain (Version 010101)

This service retrieves and maintains a set of domains. It has the following methods:

Method Name	Description
Delete	Deletes row(s) as part of the MultiMaint method.
FindByDomainName	Retrieves row(s) by domain.
FindBySteplibName	Retrieves row(s) by step library chain.
MultiMaint	Performs methods on multiple domains based on the state of the rows.
Store	Adds row(s) as part of the MultiMaint method.
Update	Updates row(s) as part of the MultiMaint method.

DomainAuditTrail (Version 010101)

This service retrieves a record of changes to domains in descending order. It has the following methods:

Method Name	Description
FindByDateTimeDomainDesc	Retrieves a record of changes to domains in descending order by date, time, and domain.
FindByDomainDateTimeDesc	Retrieves a record of changes to domains in descending order by domain, date, and time.

Deployment (Version 010101)

This service deploys domains, associated services, and step library chains between environments. It contains the Services method.

You must specify the DBID (database identification) and FNR (file number) for the source and target environments, as well as a range value for domain records to deploy. You may use wildcards to indicate the range (for example, "*", ">", and "<").

Group (Version 010101)

This service retrieves and maintains a set of groups. It has the following methods:

Method Name	Description
Delete	Deletes row(s) as part of the MultiMaint method.
FindByGroup	Retrieves row(s) by group.
MultiMaint	Performs methods on multiple groups based on the state of the rows.
Store	Adds row(s) as part of the MultiMaint method.
Update	Updates row(s) as part of the MultiMaint method.

GroupLevelSecurity (Version 010101)

This service searches the domain/group combinations and allows you to set security permissions (see the Security method for valid states). The GroupLevelSecurity service has the following methods:

Method Name	Description
AddDomainGroupCombination	Adds a domain/group combination. Specify the domain/group names in the ASOSGK input parameter group.
FindDomainGroup	Retrieves security information for groups by domain and group name.
FindGroupDomain	Retrieves security information for groups by group and domain name.
Security	Adjusts security permissions on the rows that provide valid row states. Valid row states are: - CL (clear) - DA (disable) - EN (enable) - GR (grant) - RE (revoke)
DeleteDomainGroupCombination	Deletes a domain/group combination. Specify the domain/group name in the ASOSGK input parameter group.
FindGroupsWithinDomain	Retrieves group-level security information for a domain. Specify the domain name in the ASOSGK input parameter group.
FindSpecificDomainGroup	Retrieves group-level security information for a domain/group combination. Specify the domain/group name in the ASOSGK input parameter group.

MethodLevelSecurity (Version 010101)

This service searches the business services within a domain and allows you to set security permissions (see the Security method for valid states). Security is set based on the group ID. The MethodLevelSecurity service has the following methods:

Method Name	Description
FindByDomainMethodServiceVersion	Retrieves security information for methods by domain, method, service, and version.
FindByDomainServiceMethod	Retrieves security information for methods by domain, service, and method.
FindByDomainServiceVersionMethod	Retrieves security information for methods by domain, service, version, and method.
FindByMethodServiceVersion	Retrieves security information for methods by method, service, and version.
FindMethodsWithinDomainService	Retrieves service-level security information for a domain/service combination. Specify the domain/service name in the DOM2BKEY input parameter group.
Security	Adjusts security permissions on the rows that provide valid row states. Valid row states are: • CL (clear) • DA (disable) • EN (enable) • GR (grant) • RE (revoke)

SecurityExceptionsReport (Version 010101)

This service retrieves runtime security errors in descending order by date and time. It contains the FindByDateTimeDesc method.

SecurityPermissionsReport (Version 010101)

This service retrieves the business services security report. It has the following methods:

Method Name	Description
FindByDomain	Retrieves the business services security report by domain.
FindByDomainGroupServiceMethod	Retrieves the business services security report by domain, group, service, and method.
FindByGroup	Retrieves the business services security report by group.
FindByGroupDomainServiceMethod	Retrieves the business services security report by group, domain, service, and method.

StepLibraryAuditTrail (Version 010101)

This service retrieves a record of changes to the step library chains in descending order. It has the following methods:

Method Name	Description
FindByDateTimeStepLibNameDesc	Retrieves a record of changes to the step library chains in descending order by date, time, and step library chain.
FindByStepLibNameDateTimeDesc	Retrieves a record of changes to the step library chains in descending order by step library chain, date, and time.

ServiceLevelSecurity (Version 010101)

This service searches the methods within a business service and allows you to set security permissions (see the Security method for valid states). Security is set based on the group ID. The ServiceLevelSecurity service has the following methods:

Method Name	Description
FindByDefaultProxy	Retrieves security information for business services by default subprogram proxy.
FindByDomain	Retrieves security information for business services by domain.
FindByDomainService	Retrieves security information for business services by domain and service.
FindBySteplibName	Retrieves security information for business services by step library chain.
Security	Adjusts security permissions on the rows that provide valid row states. Valid row states are: ● CL (clear) ● DA (disable) ● EN (enable) ● GR (grant) ● RE (revoke)
ServiceCountByDomain	Counts business service rows by domain.
FindServicesWithinDomain	Retrieves service-level security information for a domain. Specify the domain name in the DOM2BKEY input parameter group.

DEMO Domain

The DEMO domain contains the business services used in the demo application, SYSBIZDE. This section describes the business services supplied in the DEMO domain:

- Calculator (Version 010101)

- CalculatorAdvance (Version 010101)

- Customer (Version 010101)

- CustomerCreditAnalysis (Version 010101)

- CustomerWithContactData (Version 010101)

- CustomerWithContactData (Version 020101)

- ErrorMessageTesting (Version 010101)

- FlipString (Version 010101)

- GreatestCommonDenominator (Version 010101)

- Order (Version 010101)

- Order (Version 020101)

- Product (Version 010101)

- StringManipulation (Version 010101)

- Warehouse (Version 010101)

Calculator (Version 010101)

This service performs simple calculator functions. In addition, a success flag is set if the solution is greater than the success criteria. The Calculator service has the following methods:

Method Name	Description
Add	Adds two numbers together.
Divide	Divides two numbers.
Multiply	Multiplies two numbers.
Subtract	Subtracts one number from another.

CalculatorAdvance (Version 010101)

This service provides a calculator that performs advanced calculations. It was generated using the Object-Generic-Subp model and has the following methods:

Method Name	Description
Add	Adds two numbers together.
Divide	Divides two numbers.
Multiply	Multiplies two numbers.
Subtract	Subtracts one number from another.
GreatestCommonDenominator	Executes the GCDN subprogram to calculate the greatest common divisor for two numbers.
SolutionWithLowerNumbers	Executes the CALC and GCDN subprograms to calculate the solution with the lowest numbers.

Customer (Version 010101)

This service retrieves customers and maintains a customer. It has the following methods:

Method Name	Description
BROWSE	Lists customers in the Customer file.
DELETE	Deletes a customer record.
EXISTS	Determines whether a customer exists.
FORMER	Retrieves the previous customer record in the file.
GET	Retrieves a customer record.
INITIALIZE	Initializes a customer record.
NEXT	Retrieves the next customer record in the file.
STORE	Adds a customer record to the file.
UPDATE	Updates a customer record.

- To maintain contact information for one customer, use the CustomerWithContactData service, version 010101.

- To maintain contact information for a set of customers, use the CustomerWithContactData service, version 020101.

- To flag customers with credit limits greater than $10,000, use the CustomerCreditAnalysis service, version 010101.

CustomerCreditAnalysis (Version 010101)

This service retrieves customers and maintains a customer. It also flags customers with credit limits greater than $10,000.

CustomerWithContactData (Version 010101)

This service retrieves customers and maintains a customer and contact information, such as phone numbers and email addresses.

CustomerWithContactData (Version 020101)

This service retrieves and maintains a set of customers and their contact information, such as phone numbers and email addresses. It has the following methods:

Method Name	Description
Delete	Deletes row(s) as part of the MultiMaint method.
FindByBusinessName	Retrieves row(s) by business name.
MultiMaint	Performs individual methods on multiple rows based on the state of the rows.
Store	Adds row(s) as part of the MultiMaint method.
Update	Updates row(s) as part of the MultiMaint method.
FindByCustomerNumber	Retrieves row(s) by customer number.
FindByCustomerWarehouseId	Retrieves row(s) by customer and warehouse ID.

ErrorMessageTesting (Version 010101)

This service tests Natural error messages. To trigger an error message, type NAT*nnnn* (for example, NAT3009) in the input field.

FlipString (Version 010101)

This service retrieves a text string and reverses the order of characters in the string (for example, ABC becomes CBA).

GreatestCommonDenominator (Version 010101)

This service calculates the greatest common divisor for two numbers.

Order (Version 010101)

This service retrieves orders and maintains an order. It has the following methods:

Method Name	Description
BROWSE	Lists orders in the Order file.
DELETE	Deletes an order record.
EXISTS	Determines whether an order exists.
FORMER	Retrieves the previous order record in the file.
GET	Retrieves an order record.
INITIALIZE	Initializes an order record.
NEXT	Retrieves the next order record in the file.
STORE	Adds an order record to the file.
UPDATE	Updates an order record.

Order (Version 020101)

This service retrieves and maintains a set of orders. It has the following methods:

Method Name	Description
FindByCustomerDate	Retrieves row(s) by customer number and date.
FindByOrderCustomerNumber	Retrieves row(s) by order and customer number.
FindByOrderNumber	Retrieves row(s) by order number.
FindByOrderWarehouseId	Retrieves row(s) by order number and warehouse ID.
OrderWarehouseIdCount	Counts order row(s) based on order number and warehouse ID.

Product (Version 010101)

This service retrieves products and maintains a product. It has the following methods:

Method Name	Description
BROWSE	Lists products in the Product file.
DELETE	Deletes a product record.
EXISTS	Determines whether a product exists.
FORMER	Retrieves the previous product record in the file.
GET	Retrieves a product record.
INITIALIZE	Initializes a product record.
NEXT	Retrieves the next product record in the file.
STORE	Adds a product record to the file.
UPDATE	Updates a product record.

StringManipulation (Version 010101)

This service manipulates the characters in a text string. It has the following methods:

Method Name	Description
ConvertToLowerCase	Executes the CSUCASE subprogram to convert a text string to lower case.
ConvertToMixedCase	Executes the CSUCASE subprogram to convert a text string to mixed case.
ConvertToUpperCase	Executes the CSUCASE subprogram to convert a text string to upper case.
ReverseString	Executes the FLIPSTR subprogram to reverse the order of characters in a text string (for example, ABC becomes CBA).

Warehouse (Version 010101)

This service retrieves warehouses and maintains a warehouse. It has the following methods:

Method Name	Description
BROWSE	Lists warehouses in the Warehouse file.
DELETE	Deletes a warehouse record.
EXISTS	Determines whether a warehouse exists.
FORMER	Retrieves the previous warehouse record in the file.
GET	Retrieves a warehouse record.
INITIALIZE	Initializes a warehouse record.
NEXT	Retrieves the next warehouse record in the file.
STORE	Adds a warehouse record to the file.
UPDATE	Updates a warehouse record.

INTERNAL Domain

For a developer to use functionality within Natural Business Services, he or she must belong to a group that has access to the INTERNAL domain. The business services in the INTERNAL domain perform many functions, including:

- Access the Business Service repository to determine what services are available.

- Create XML that describes the business service.

- Read Natural source code.

This section describes the business services contained in the INTERNAL domain:

- BusinessService (Version 010101)

- BusinessServiceDetail (Version 010101)

- BusinessServiceDetail (Version 020101)

- GenerateServiceDataDefinition (Version 010101)

- ModelDefaults (Version 010101)

- NaturalLibrary (Version 010101)

- NaturalModule (Version 010101)

- NaturalSource (Version 010101)

- NBSlfiles (Version 010101)

- PredictMetaData (Version 010101)

- RepositoryQueries (Version 010101)

- ServiceProxyMetaData (Version 010101)

- StepLibraryChain (Version 010101)

- SubprogramPDAs (Version 010101)

BusinessService (Version 010101)

This service retrieves a set of business services. It has the following methods:

Method Name	Description
ServiceCountByDomain	Counts row(s) by domain.
FindByDefaultProxy	Retrieves row(s) by default subprogram proxy.
FindByDomain	Retrieves row(s) by domain.
FindByDomainService	Retrieves row(s) by domain and service.
FindBySteplibName	Retrieves row(s) by step library chain.

BusinessServiceDetail (Version 010101)

This service retrieves details about a business service, such as the methods and step library chain used. It contains the Retrieve method.

BusinessServiceDetail (Version 020101)

This service retrieves and maintains details about a business service, such as the methods and step library chain used. It has the following methods:

Method Name	Description
Add	Executes the BSIF___N subprogram with the Add method.
Delete	Executes the BSIF___N subprogram with the Delete method.
Get	Executes the BSIF___N subprogram with the Get method.
Next	Executes the BSIF___N subprogram with the Next method.
Update	Executes the BSIF___N subprogram with the Update method.
Retrieve	Executes the SNUSINFO subprogram with the Retrieve method.
RetrieveProxyAndSubprogram	Accepts a domain name, service name, and version number and returns all subprogram proxies and their associated subprograms.

GenerateServiceDataDefinition (Version 010101)

This service accepts the name of a subprogram proxy and generates the service parameter definitions. It contains the Generate method.

ModelDefaults (Version 010101)

This service retrieves the default values for a model. It has the following methods:

Method Name	Description
ObjectBrowseSelectMethods	Accepts the name of an object browse subprogram and returns user-modifiable method names for the service.
ObjectGenericLevel1s	Accepts the names of up to 10 subprograms and returns a maximum of 100 level 1 fields for each.

NaturalLibrary (Version 010101)

This service lists all Natural libraries based on the database ID (DBID) and file number (FNR). It contains the List method.

NaturalModule (Version 010101)

This service retrieves a list of Natural modules or determines if a module exists. It has the following methods:

Method Name	Description
Browse	Lists Natural modules. You can restrict the list to proxies that are not subprograms (OPT-TYPE=Y) or to subprograms that are not proxies (OPT-TYPE=X).
Exist	Determines whether a Natural module exists.

NaturalSource (Version 010101)

This service downloads or uploads Natural source code. It has the following methods:

Method Name	Description
Download	Downloads Natural source code.
Upload	Uploads Natural source code.

NBSlfiles (Version 010101)

This service retrieves the DBID (database identification) and FNR (file number) for LFILE 135 and 136. It contains the Retrieve method.

PredictMetaData (Version 010101)

This service retrieves field and relationship information for files in Predict. It has the following methods:

Method Name	Description
Download	Downloads field and relationship information for a file defined in Predict.
RetrievePredictFields	Retrieves Predict metadata for all fields in a file.
RetrievePredictFiles	Retrieves a list of Predict files.

RepositoryQueries (Version 010101)

This service retrieves information from the Business Service repository, such as which business services use the Browse method. It has the following methods:

Method Name	Description
FindAllUpperCaseBrowses	Retrieves business services that use the BROWSE method.
FindBrowses	Retrieves business services that use the Browse method.
FindByDomainMethodServiceVersion	Accepts the name of a domain and retrieves services by domain, method, service, and version.
FindByDomainServiceMethod	Retrieves services by domain, service, and method. **Note:** This method not required by current client queries.
FindByDomainServiceVersionMethod	Retrieves services by domain, service, version, and method. **Note:** This method not required by current client queries.
FindByMethodServiceVersion	Retrieves services by method, service, and version. **Note:** If you specify the name of a domain, this method will retrieve services in domain order.
FindByServiceVersion	Retrieves services by service and version. **Note:** If you specify the name of a domain, this method will retrieve services in domain order.
FindFindBys	Retrieves services that have method names beginning with "FindBy".
FindMultiMaints	Retrieves services that have a method called "MultiMaint".

ServiceProxyMetaData (Version 010101)

This service uses the conversation factory to download the metadata for a subprogram proxy. It contains the Download method.

StepLibraryChain (Version 010101)

This service retrieves and maintains a set of step library chains. It has the following methods:

Method Name	Description
Delete	Deletes row(s) as part of the MultiMaint method.
FindByStepLibraryChain	Retrieves row(s) by step library chain.
MultiMaint	Performs individual methods on multiple rows based on the state of the rows.
Store	Adds row(s) as part of the MultiMaint method.
Update	Updates row(s) as part of the MultiMaint method.

SubprogramPDAs (Version 010101)

This service accepts a list of parameter data areas (PDAs) and the date on which they were last compiled and downloads all parameters that have been modified since that date. It contains the Download method.