## **Software**

## **Natural Business Services**

**Natural Business Services Tools and Utilities** 

Version 5.3.1

February 2010

# Natural Business Services

This document applies to Natural Business Services Version 5.3.1.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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## **1** Natural Business Services Tools and Utilities

*Natural Business Services Tools and Utilities* describes the tools and utilities provided by Natural Business Services (NBS).

This documentation is intended for developers who are familiar with Natural Business Services and want to learn how to use the tools and utilities supplied with NBS.

٩		Describes the Broker Driver program, which you can use to send and receive low-level Broker calls for testing purposes.
٩	NBS Tester	Describes the NBS tester, which you can use to test the connections used to access your business services.
٢	NBS Server Monitor	Describes the Server Monitor application provided by Natural Business Services (NBS). The <b>NBS Server Monitor</b> provides GUI access to the Business Service Administration subsystem, where you can monitor and control active NBS servers.

Natural Business Services Tools and Utilities covers the following topics:

## 2 Broker Driver Program

You can use the Broker Driver program to send and receive low-level EntireX Broker calls for testing purposes.

#### To access the Broker Driver program:

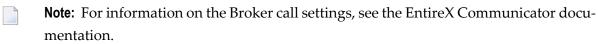
1 Select **All Programs > Software AG Natural Business Services > Broker Driver** on the **Start** menu.

The Broker Driver window is displayed. For example:

🔁 Broker Driver							
EntireX Control Block	Ģ	×	Se	nd Data:			
<b>₽ 2</b> ↓ <b>□</b>							
🗆 Communication				ľ			
BrokerID							
ConversationID							
Function	SEND						
KernelSecurity							
Security_Token	00 00 00 00 00 00 00 00						<u>~</u>
	17			<			>
Wait			Re	ceive Data:			
🗉 Compress / Encry	pt						
CompressLevel	COMPRESS_LEVEL_0						<u> </u>
EncryptLevel	NONE						
🗆 Misc							
AdapterError							
AdCount	0						
APIType	TYPE1						
APIVersion	VERS8	-					
UserID:			Last	: Response:		_	
Password:				EBCDIC	🥅 Display as Hex	✓ Reset Conversation ID	Go! Receive

2 Define information about the Broker call in the appropriate input fields.

For example, the Broker ID and Kernel Security settings for the call. Use the scroll bar to display additional input fields.



- 3 Type the user ID and password for the connection you are testing.
- 4 Select Go!.

The Broker Driver program sends the data to the server.

5 Select **Receive** to display the data returned from the server.

## 3 NBS Tester

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Using the NBS Tester, you can build a test suite to test the connections used to access your business services. The NBS Tester is available on the **Tools** menu in the Natural Business Services Natural plug-in or as a stand-alone utility on the **Start** menu.

- If you run this utility from the Natural plug-in, the current mapped connection is tested.
- If you run the utility from the **Start** menu, you can select which connection to test.

This section covers the following topics:

## **Build a New Test Suite**

#### To create a new test suite:

1 Select **All Programs > Software AG Natural Business Services > NBS Tester** on the **Start** menu.

The NBS Tester window is displayed. For example:

🗗 NBS Tester			
<u>File ▼ H</u> elp ▼			
	Desi	ign Log	
	í	Stop	Run

#### 2 Select **New** on the **File** menu.

Test Suite is displayed in the upper left corner of the window.

#### 3 Select **Test Suite**.

The Design tab becomes active. For example:

C NBS Tester		
<u>Eile ▼ H</u> elp ▼		
Test Suite	•	Design Log Connection ID: User ID: Password: Notes:
		Stop Run

- 4 Select the connection ID in **Connection ID**.
- 5 Type the user ID and password for the connection.
- 6 Open the context menu for Test Suite.
- 7 Select Add Test.

The Design tab displays the specifications for a new test. For example:

NBS Tester		×
<u>Eile ▼ H</u> elp ▼		
Gr Test Suite L. New Test	Design Log   Name: New Test   Category: Category:   Always download PDA definitions before running   Connection   Use parent suite's connection   Development 1   Use parent suite's credentials   User ID:   pwrusr   Password:	
	Iterations: 1	
	Stop Run	

8 Type a descriptive name for the test you are creating in **Name** (for this example, type "Test example").

The name is displayed in the Test Suite tree. You can optionally specify the following information for the test:

Option	Description
Category	Name of the category for this test suite (for example, Development).
Always download PDA definition before running	If this option is selected, the PDA definition is downloaded before the test is run.
Connection/Use parent suite's connection	If this option is selected, the test suite is part of another test suite and will use the parent test suite's connection ID. If this option is not selected, select the connection ID to use for this test suite.
Credentials/Use parent suite's credentials	If this option is selected, the test suite is part of another test suite and will use the parent test suite's credentials. If this option is not selected, type the user ID and password to use for this test suite.
Iterations	Number of times to run the test.
Notes	Information about the test suite.

9 Open the context menu for the new test in the Test Suite tree.

For this example, the Test example node.

10 Select Add Actions.

The Select Actions window is displayed. For example:

Select Actions
Logon
📃 <u>P</u> opulate data
Load PDA
Call service
Show PDA
📃 <u>V</u> erify data
🔲 Logoff
OK <u>C</u> ancel

This window lists the actions available for the test suite.

11 Select the actions you want to test.

For this example, select the following actions:

- Populate data
- Call service
- Show PDA
- Verify data
- 12 Select OK.
- 13 Expand the Test example node.

#### For example:

🛃 NBS Tester	
Eile - Help -	
	Design Log   Name: Test example
	Stop Run

14 Select **Call Service** to specify which service to call.

The call service information is displayed on the Design tab. For example:

C NBS Tester		
Eile ▼       Help ▼	•	Design Log   ID:   Call Service   Domain:   Service name:   Version:   1   1   Method:   PDA send flags:

15 Type the following information:

Field	Input
Domain	DEMO
Service name	Calculator
Method	Add



**Note:** Ensure the input values use the same case as indicated above.

Optionally, you can:

- Type a different call service in **ID**
- Type a different version number in **Version** (by default, 1.1.1)
- 16 Select **Populate data** to specify which data to send to the service for the test.

The Populate data information is displayed on the Design tab. For example:

🛃 NBS Tester						
Eile - Help -						
■ Test Suite ■ Test example		Design Log				
Populate data (Populate Data)		ID:	Populate data			
Call Service (Call Service) Show PDA (Show PDA)		Target action:			•	<b>~</b>
Verify Data (Verify Data)		Eields:		_		_
		Name		Index	Value	
	∎					
	,				Stop	Run

- 17 Select Call Service in Target action.
- 18 Type the following two lines in **Name**:

INPUT-DATA.#FIRST-NUM INPUT-DATA.#SECOND-NUM

19 Type "1" in **Value** for both numbers.

For example:

<ul> <li>Test Suite</li> <li>Test example</li> <li>Call Service (Call Service)</li> <li>Show PDA (Show PDA)</li> <li>Verify Data (Verify Data)</li> </ul> ID: Populate data Iarget action: Call Service Eields: INPUT-DATA.#FIRST-NUM INPUT-DATA.#FIRST-NUM INPUT-DATA.#SECOND-NUM INPUT-DATA.#SECOND-NUM	Eile • Help •			
INPUT-DATA.#FIRST-NUM 1 INPUT-DATA.#SECOND-NUM 1 **	Test example     Populate data (Populate Data)     Call Service (Call Service)     Show PDA (Show PDA)	ID: Populate data Target action: Call Service	 ×	]
		INPUT-DATA.#FIRST-NUM INPUT-DATA.#SECOND-NUM	 1	

#### 20 Select Show PDA.

This action allows you to debug the service for testing purposes. The Show PDA information is displayed on the Design tab. For example:

Re NBS Tester		
Eile ▼ Help ▼		
Test Suite Test example Ould the output of the output	<ul> <li>Design Log</li> <li>Source action:</li> <li>Wait for the PDA viewer to close</li> <li>Enabled</li> </ul>	
		Run

21 Select Call Service in Source action.

The source action must be specified. This value will be any call service in your test.

22 Select **Verify Data** to verify that the service is working correctly.

The Verify data information is displayed on the Design tab. For example:

rd NBS Tester		
<mark>Eile ▼ H</mark> elp ▼		
Test Suite     Test example     Populate data (Populate Data)     Call Service (Call Service)     Show PDA (Show PDA)     Verify Data (Verify Data)		Design Log ID: Verify Data Source action:
	•	Name Index Regex Value
		Stop Run

- 23 Select Call Service in Source action.
- 24 Type the following in Name:

#### OUTPUT-DATA.#RESULT

- **Note:** Regex indicates a Regular Expression. You can use this field to specify a Regex pattern to check for matches.
- 25 Type "2" in Value.

For example:

<ul> <li>Test Suite</li> <li>Test example</li> <li>Populate data (Populate Data)</li> <li>Call Service (Call Service)</li> <li>Show PDA (Show PDA)</li> <li>Verify Data (Verify Data)</li> <li>Verify Data (Verify Data)</li> </ul>	<mark>c⊉ NBS Tester</mark> Ele ▼ <u>H</u> elp ▼	
	<ul> <li>Test example</li> <li>Populate data (Populate Data)</li> <li>Call Service (Call Service)</li> <li>Show PDA (Show PDA)</li> </ul>	ID: Verify Data Source action: Call Service Eields Name Index Regex Value OUTPUT-DATA.#RESULT 2

This value indicates that the expected result of the test is 2.

26 Select Run.

Because you selected **Show PDA**, the **Natural Data Area Viewer** window is displayed. For example:

File 🔻				
- 				
Field Name	Index	Value		
1 INPUT-DATA				
2 #FUNCTION (A30)	l	Add		
2 #FIRST-NUM (N5.2)			1	
2 #SECOND-NUM (N5.2)			1	
2 #SUCCESS-CRITERIA (N5.0)			0	
1 OUTPUT-DATA				
2 #RESULT (N11.2)			2	
2 #TIME (T)		2/18/2009 5:03:43 PM		
2 #SUCCESS (L)		True		

This window displays the INPUT/OUTPUT data in the PDA for the service.

27 Close the window.

28 Select the Log tab to see the results of the test.

For example:

NBS Tester	
Eile ▼ Help ▼	
	Design Log Level: 0  Filter  Started Test Suite using connection: 'Development 1' UserID: Calling Environment service Environment call succeeded -> NES Data Installed:True Versio: Test Started: Test example. Using ConnectionID: 'Development Iteration Started: Test example (1 of 1) Populate data: Started Populate data: Passed Time: 0.00 (seconds) Call Service: Passed Time: 0.53 (seconds) Show PDA: Started Show PDA: Started Verify Data: Started Verify Data: Passed Time: 0.00 (seconds) Test example passed (1 of 1) Suite completed -> Test count: 1 failures: 0 Call Service: 0
	Stop Run

29 Select Save on the File menu to save the test suite.

A window is displayed to type a name for the test and select a location to store the test suite.

Note: You can repeat this procedure to create additional test suites.

### Add a Test to an Existing Test Suite

After saving a test suite, you can add other tests to the suite.

#### To add a test to an existing test suite:

1 Select **Open** on the **File** menu.

A selection window is displayed.

2 Select the test suite.

The selected test suite is displayed in the NBS Tester window.

1

Expand the Test node to see the actions for the test. For example:

NBS Tester		
Eile ▼ Help ▼ □ Test Suite	Design Log	
Test example     Test example     Populate data (Populate Data)     Call Service (Call Service)     Show PDA (Show PDA)     Verify Data (Verify Data)	Log         ⊆onnection ID:       Development 1         User ID:       pwrusr         Password:	
	Notes:	
	Stop	Run

Optionally, you can use this window to:

- Change the connection ID for the new test
- Change the user ID or password
- 3 Open the context menu for Test Suite.
- 4 Select Add Test.

The new test is added to the test suite. For example:

🖻 NBS Tester	
Eile THelp T	
Test Suite Populate data (Populate Data) Call Service (Call Service) Show PDA (Show PDA) Verify Data (Verify Data) New Test	Design Log         Name:       New Test         Category:
	<u>S</u> top

5 Enter the specifications for the new test.

For information, see **Build a New Test Suite**.

6 Select **Save** on the **File** menu to save the changes.

## Reorder a Test in an Existing Test Suite

You can reorder the tests in an existing test suite.

#### To reorder a test in an existing test suite:

1 Select **Open** on the **File** menu.

A selection window is displayed.

2 Select the test suite.

The selected test suite is displayed in the NBS Tester window.

Expand the Test node to see the actions for the test. For example:

NBS Tester		
<mark>Eile ▼ H</mark> elp ▼ Test Suite	Design Log	
<ul> <li>Test example</li> <li>Populate data (Populate Data)</li> <li>Call Service (Call Service)</li> <li>Show PDA (Show PDA)</li> <li>Verify Data (Verify Data)</li> </ul>	Connection ID: Development 1  User ID: pwrusr Password:	
	Notes:	
	Stop	<u>R</u> un

- 3 Select the test you want to reorder.
- 4 Select the up or down arrow to move the test to a new position.

In the following example, the Call Service action was moved up in the list:

🗗 NBS Tester		
Eile • Help •         • Test Suite         • Test example         • Opulate data (Populate Data)         • Show PDA (Show PDA)         • Verify Data (Verify Data)	*	PDA send flags:

5 Select **Save** on the **File** menu to save the changes.

## **Delete a Test Suite**

#### To delete an existing test suite:

- 1 Open the context menu for the test suite.
- 2 Select Delete.
- 3 Select **Save** on the **File** menu to save the changes.

## Delete a Test from a Test Suite

#### To delete a test from an existing test suite:

- 1 Open the context menu for the test suite.
- 2 Select Delete.
- 3 Select **Save** on the **File** menu to save the changes.

## Access the NBS Configuration Utility

You can use the NBS Tester to access the Configuration utility.

### ▶ To access the Configuration utility:

■ Select **NBS Configuration** on the **File** menu.

The Configuration utility is displayed. For example:

🔁 Configur	ation Utility (C:\Pro	gram Files\Software A	G∖Natura	l Business	Services\V5.3\Cl	ientConfig.xml)			
Connections	Visual Studio Add-In								
File name:	File name: C:\Documents and Settings\All Users\Application Data\Software AG\Natural Business Services\Configuration\DispatchClient.Config								
	Connection ID	Description	Settings	Environmen	t Optional				
Producti		Default EntireX Broker	Jecongs	Environmen	Optional				
🔇 Develop		SPoD connection to us	Connect	tion <u>I</u> D:	Production				
NAT42				_					
S Educatio	on(SPod)	New SPoD connection		ire server					
🔇 Develop	ment 1		Encrypt	ion:	None 💙				
🔇 Develop	ment 3	SPoD connection to us	⊆ompre	ssion:	None 🔽				
			<u>K</u> ernel s	e er wikt te	Auto				
			Veniers	ecuncy:	Auto				
			<u>D</u> ecimal	separator:		~			
			Serve	r Parameters					
			Broker	ID: ETB	001	Port: 1971			
			_						
			Server	class: BUS	INESS				
					Server Name	Broker Service			
			Dispati	cher:	DISPATCH	MAIN			
			CEacto	ory:	CFACTORY	MAIN			
<			<u>A</u> ttach	:	ATTACH	MAIN			
New	• T	est Import	S <u>e</u> curit	y:					
							OK <u>C</u> ancel		

For information about the settings on this panel, see:

- For the Eclipse plug-in, Configure Connections
- For the Visual Studio add-in, Configure Connections



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The **NBS Server Monitor** is a GUI application that provides functionality similar to the characterbased Manage Servers function in the Business Service Administration subsystem ("SA MS" on the command line). Use the **NBS Server Monitor** windows to monitor and control active Natural Business Services servers. This application accepts the same commands as are available using the Manage Servers function. The only restriction is that at least one instance of the Attach Manager must be running, which prevents its use to initiate the first session of that server.

Before you can use the **NBS Server Monitor**, you must specify the development configuration settings for the client. For information see Configure the Client Component.

## Access the NBS Server Monitor

- To access the NBS Server Monitor:
- Select All Programs > Software AG Natural Business Services > Server Monitor on the Start menu.

The NBS Server Monitor is displayed. For example:

land the server Monitor	
Commands Trace View Tools Help	
	Server Explorer
Information 🥑 🔀	Status 🥑 🔀
	Retrieving Server List for broker: BKR13003:4( Retrieving NBS Services for:BKR13003:4010 BL Retrieve done

The **NBS Server Monitor** attempts to connect to all pre-defined servers and display detailed information about the servers that are currently running.

### **Use the NBS Server Monitor Windows**

The following table describes the NBS Server Monitor windows:

Window	Description
Main	Displays the commands sent to the servers. Commands issued via the context menu are also recorded in this window, which allows you to modify and re-submit the commands to the same server. The main window also contains the output from most commands sent to the servers.
Server Explorer	Contains a tree view of all pre-defined Broker nodes, as well as the names of all the NBS servers and services currently running under each node.
Properties	Contains detailed information about the server selected in the Server Explorer window.
Information	Contains additional details about the server selected in the <b>Server Explorer</b> window.
Status	Contains information about the status of the connection for each Broker node. <b>Tip:</b> Use this window as a starting point for debugging communication problems.

## Arrange the NBS Server Monitor Windows

Each of the NBS Server Monitor windows can be displayed in the following modes:

- docked
- floating
- hidden
- auto-hide

#### To select the display mode:

- 1 Open the context menu for the window's title bar.
- 2 Select one of the display modes listed on the submenu.
- **Note:** You can also use drag-and-drop functionality to move any window by its title bar.

- To restore all windows to their original arrangement:
- Select **Reset** on the **View** menu.

## **Refresh Data**

Since the server information is constantly changing, you may want to refresh the data periodically. This section describes how to refresh the data manually and how to set up the **NBS Server Mon-itor** to automatically retrieve fresh data at predefined intervals.

To manually refresh data:

■ Select **Refresh** on the **View** menu.

To set up the NBS Server Monitor to automatically refresh data:

1 Select **Configuration** on the **Tools** menu.

The Server Monitor Configuration window is displayed. For example:

🛠 Server M	onitor Configuration 🛛 🛛 🔀	
🔲 Enable a	auto <u>r</u> efresh	
Refres	n interval: 15 📻 (seconds)	
Load window layout on start		
<u>U</u> ser ID:	GUEST	
<u>W</u> ait time:	155	
	<u>O</u> K <u>C</u> ancel	

2 Select Enable auto refresh.

The **Refresh interval** option is enabled.

- 3 Select the number of seconds before refreshing data.
- 4 Select **OK**.

## **Set Security Credentials**

#### To set Broker security credentials for a remote Broker node:

- 1 Open the context menu for the Broker node in the **Server Explorer** window.
  - **Tip:** You can also select **Set Credentials** on the **Tools** menu.

The Set Credentials window is displayed, prompting you to enter your user ID and password.

- 2 Select **OK**.
- 3 Select **Refresh** on the **View** menu to refresh the **NBS Server Monitor** window.

## Send Commands to the Servers

You can send commands to any server, provided there is at least one copy of an Attach Manager running under the corresponding Broker node.

#### To send commands to a server:

- 1 Open the context menu for the server in the **Server Explorer** window.
  - **Tip:** You can also open the **Commands** menu.
- 2 Select the command from the commands listed.

## **Create Trace Files**

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#### To create trace files for any active server:

1 Open the context menu for the server in the **Server Explorer** window.



Tip: You can also select Create on the Trace menu.

2 Select Trace.