



ICM Scripting: Troubleshooting Tools and Methods



Troubleshooting

1. Script Creation and Testing
2. Routing Logic and Configuration
3. System Troubleshooting

Script Creation and Testing

- **Validate Script**
- **Validate formula**
- **Monitor mode**
- **Test scripts (prompt testing etc.)**
- **Call Tracer**
- **Help - Script Editor**

Validate Script

- Validate script button
- Highlights error
- Displays and highlights offending node for immediate edit
- Does NOT test YOUR logic!
- Think of as “Spell Checker”

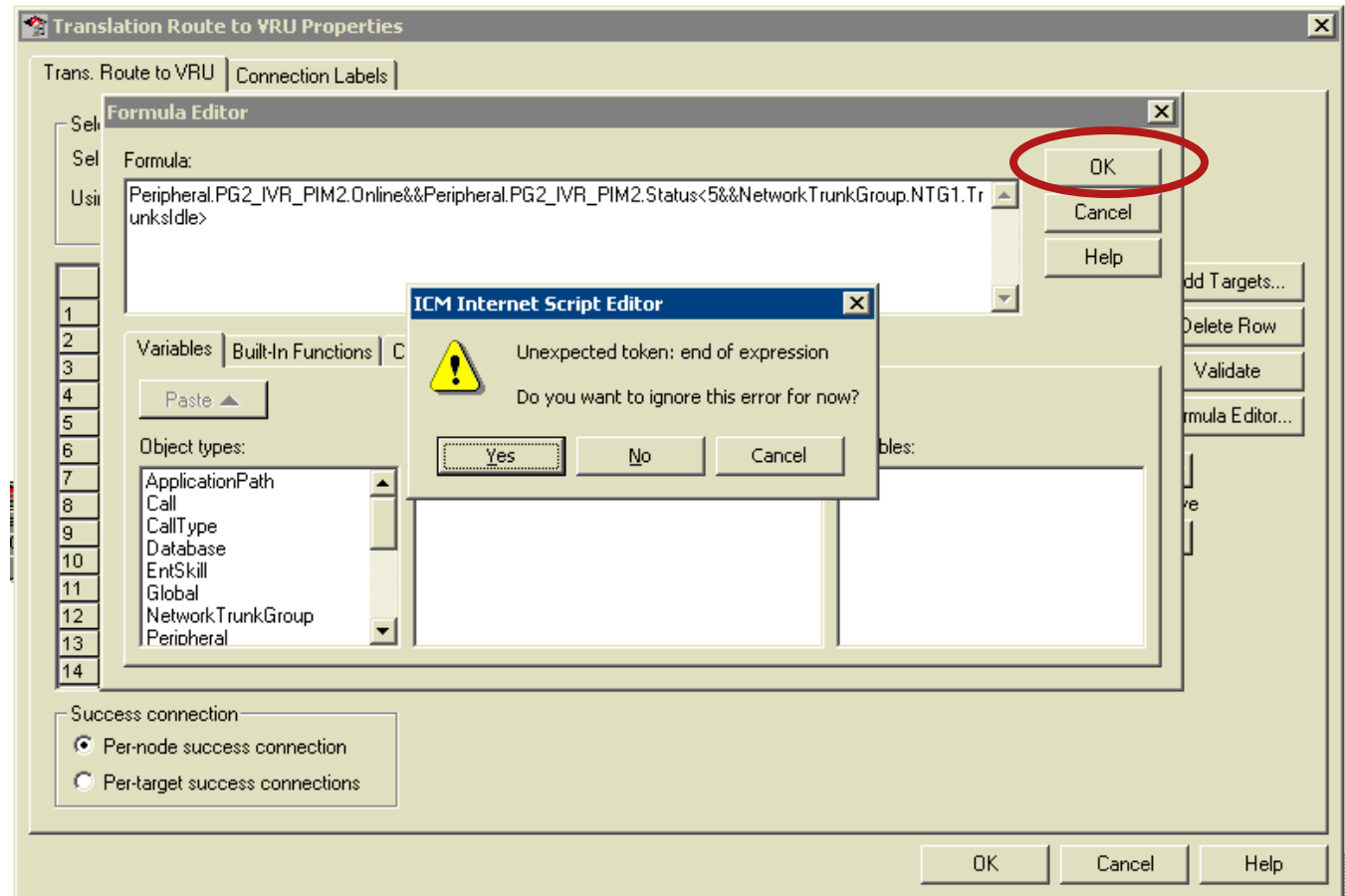
The screenshot displays the Validate Script tool interface. At the top, a toolbar contains a 'Validate Script' button (a checkmark icon) circled in red. Below the toolbar is a workflow diagram on a grid background. The diagram starts with a 'Start' node (a blue box with a green light icon) labeled '1'. A line connects it to a 'Translation Route to VRU' node (a grey box with a red light icon) labeled '4'. This node contains a table with the following data:

Service	No.	%
PG2_IVR_PIM2.Q.SVC1		

Below the workflow diagram is a 'Validate Script' window. It shows a 'Script errors:' section with a tree view. The tree view shows a folder 'BM_test_prompts {All Customers}.013 (0 errors, 1 warning)' which is expanded to show a warning: 'Warning: Translation Route to VRU - Fail connection is missing.' The warning is highlighted with a blue background.

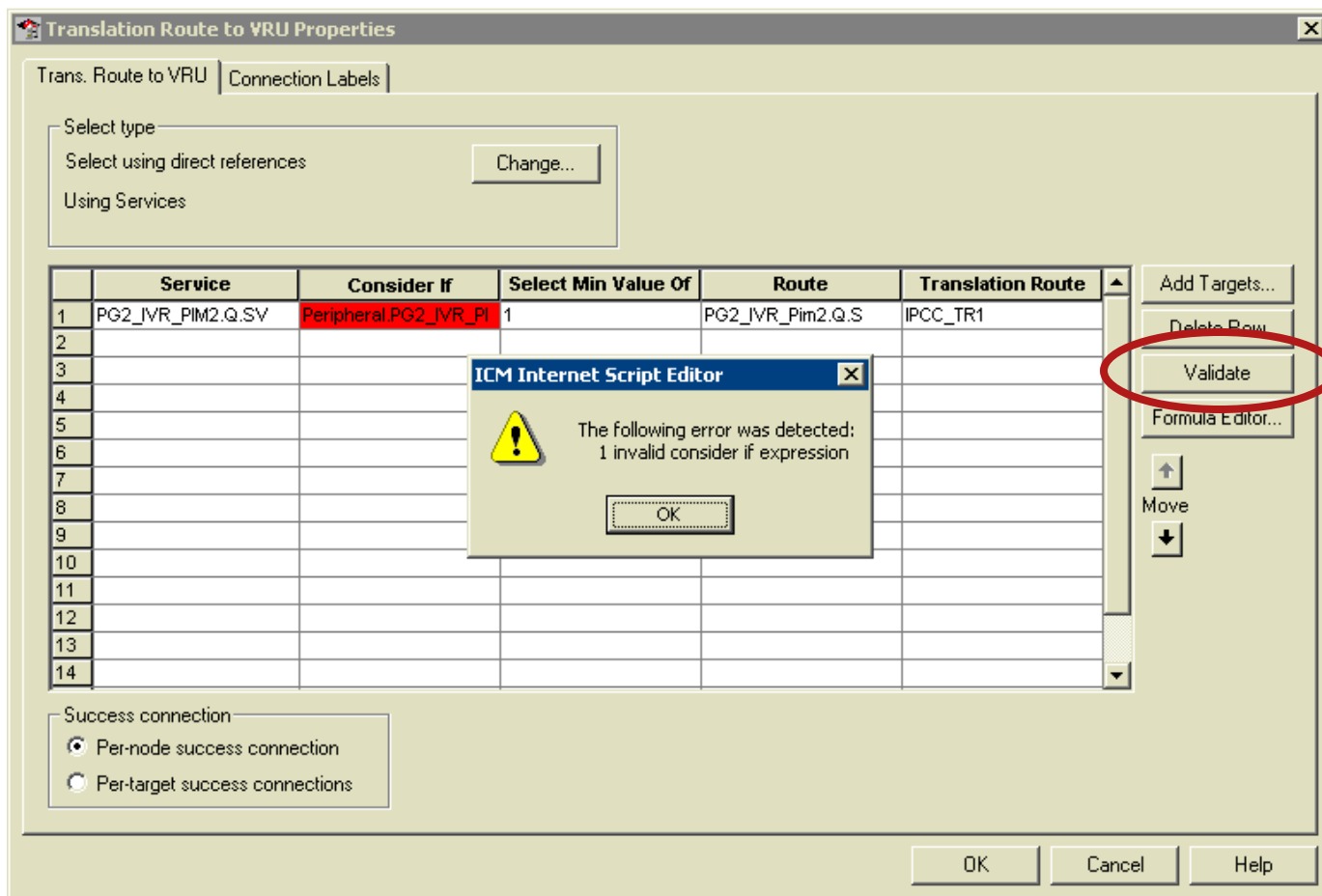
Validate Formula

- Automatically validates when click OK to exit
- Choose to ignore and return later or fix



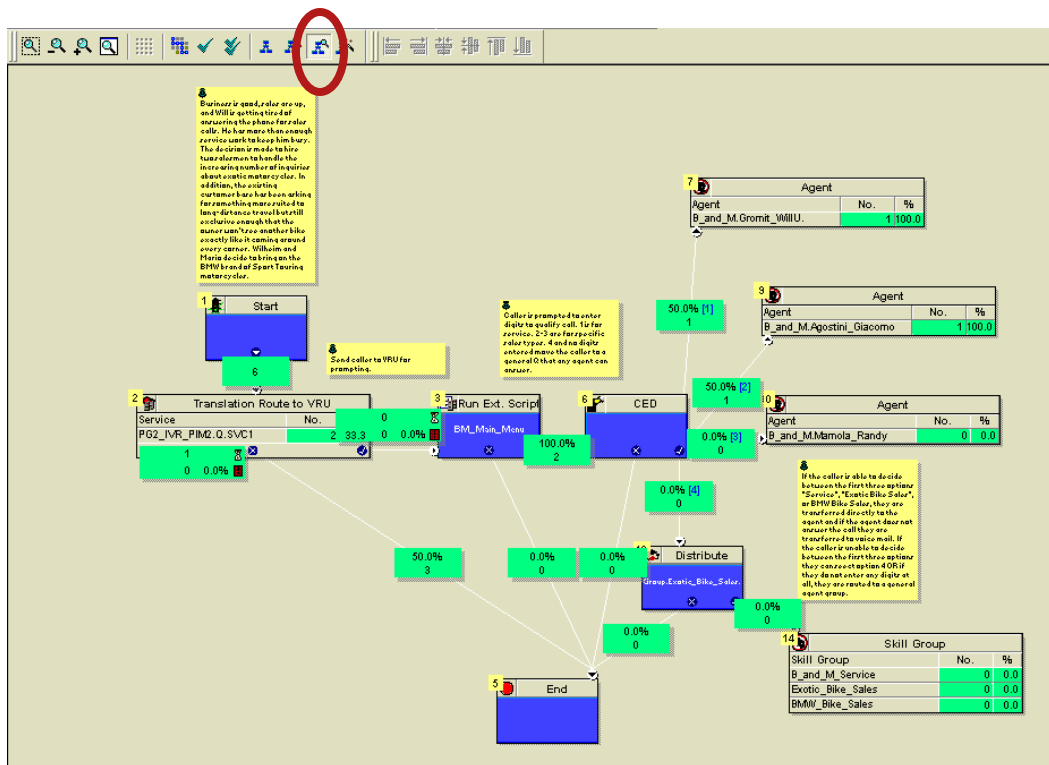
Validate Formula

- Validate button
- Highlights offending section
- Does NOT check your logic, only mathematical syntax

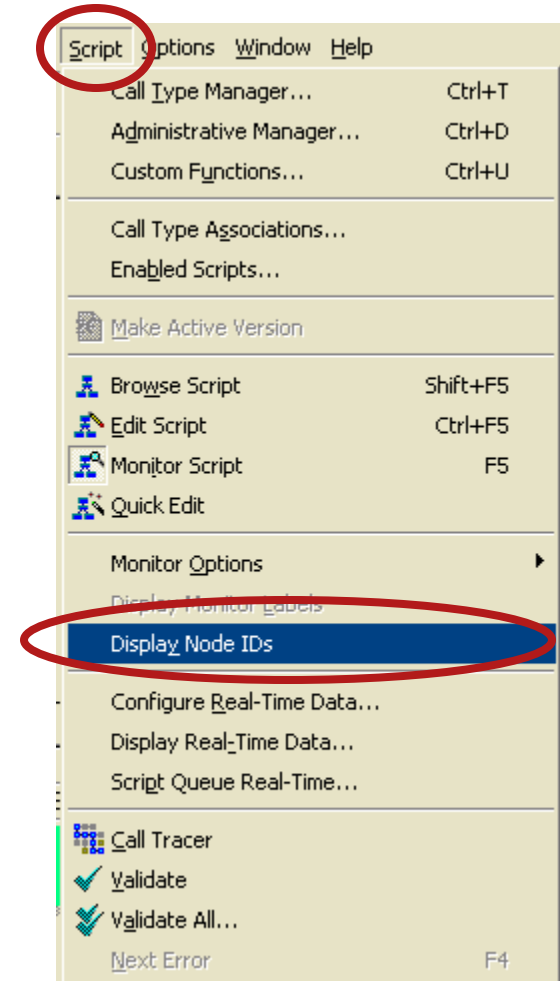


Monitor Mode

- Display Node IDs
- Place in Monitor Mode

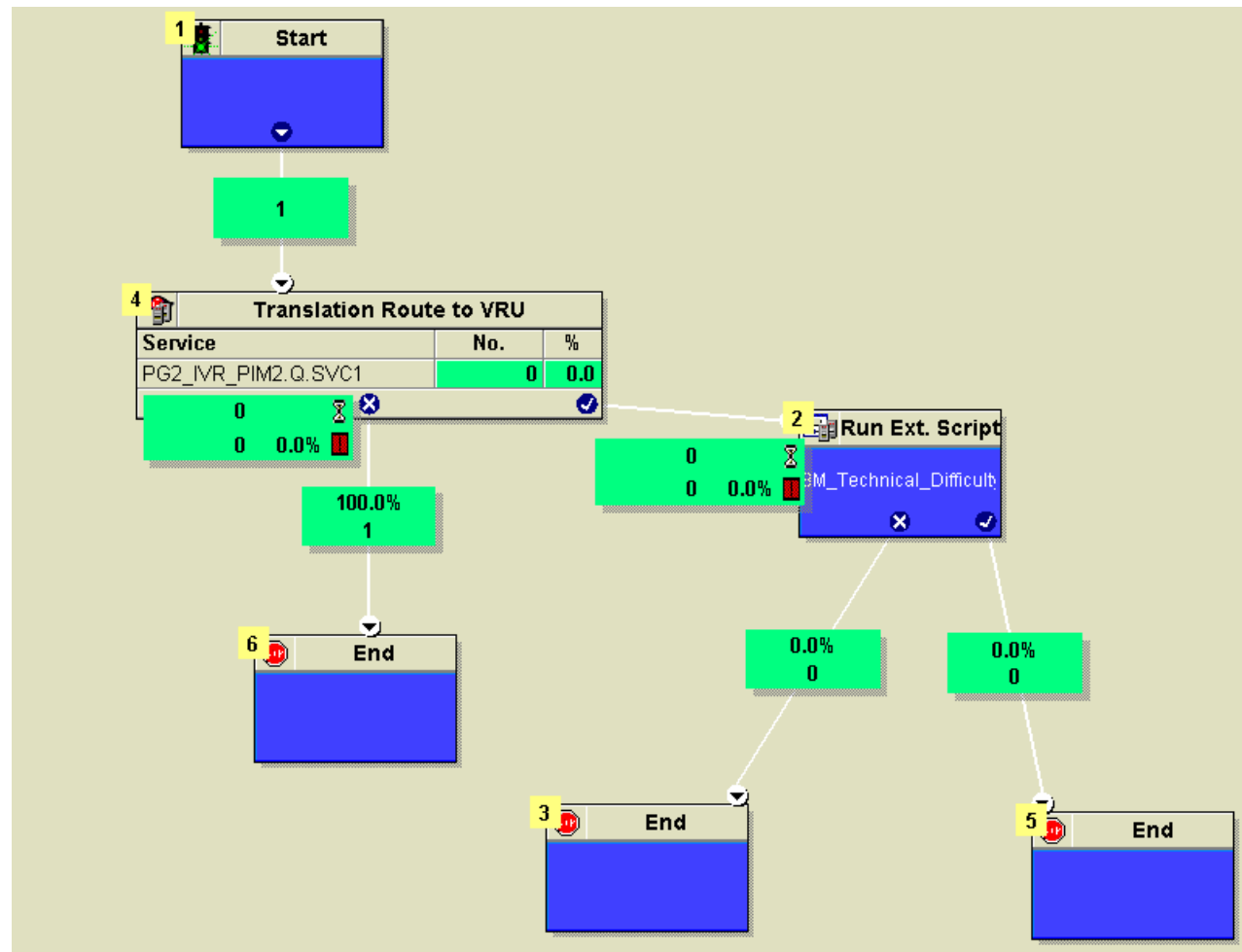


- Observe calls flowing through script nodes



Script Creation and Testing - Test Scripts

- Simplest possible scripts
- Plenty of room to observe calls flow through in monitor mode
- Each fail and success node to separate end or other node for better visibility
- Only what is needed to test node



Call Tracer

- Open call tracer, enter parameters as required to define call type: DN, ANI, CED
- Send Call
- Observer call flow, node by node, in script window

The screenshot displays the ICM Internet Script Editor interface. The main window shows a call flow diagram with nodes: Start (1), Translation Route to VRU (2), Run Ext. Script (3), CED (6), Distribute (7), and End (5). A red circle highlights the 'Call Tracer' icon in the toolbar. The right-hand side contains configuration panels for Media Routing Domain (Cisco_Voice), Routing client (CM_PIM1_RC), Dialed number (888BMBIKES), ANI, and CED (3). Below these is a 'Responses for External Script Run' table and a 'Network Transfer Call' section.

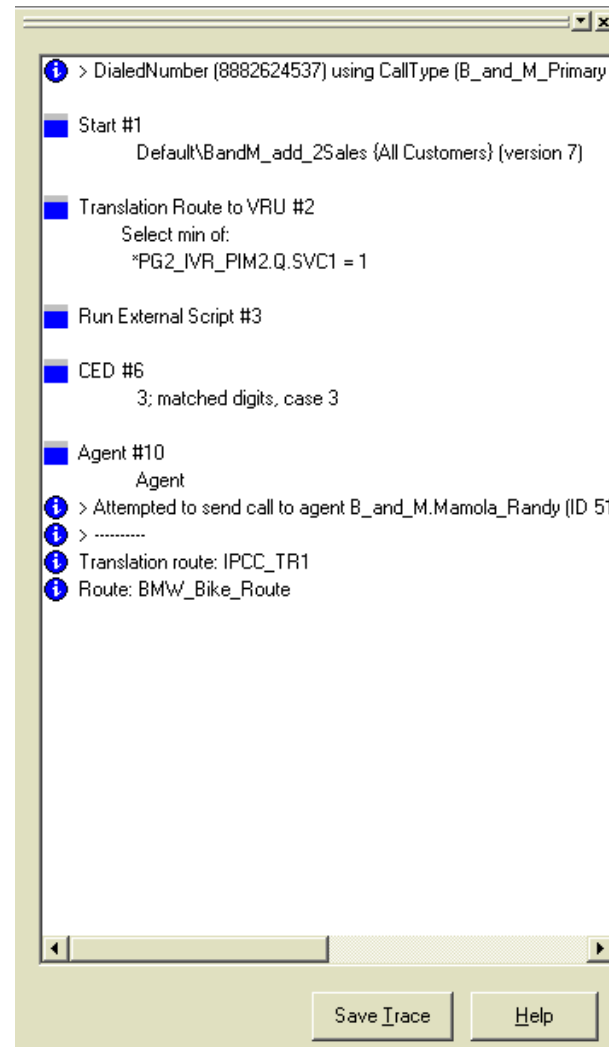
Step	Response	Initial Condition
Initial	Var1=,Var2=,Var3=,Var4=,Var5=	

Buttons: Save As Defaults, Send Call, Help

Footer: For Help, press F1 | User: train3\wvuser1 | 55% | Monitor | All Customers | Instance: lab2

Call Tracer

- Follow call flow logic, node by node, in the trace diagram
- Trace includes all node IDs as well as all results of all formulas and variables
- Indicates which result “wins” with asterisk (*)

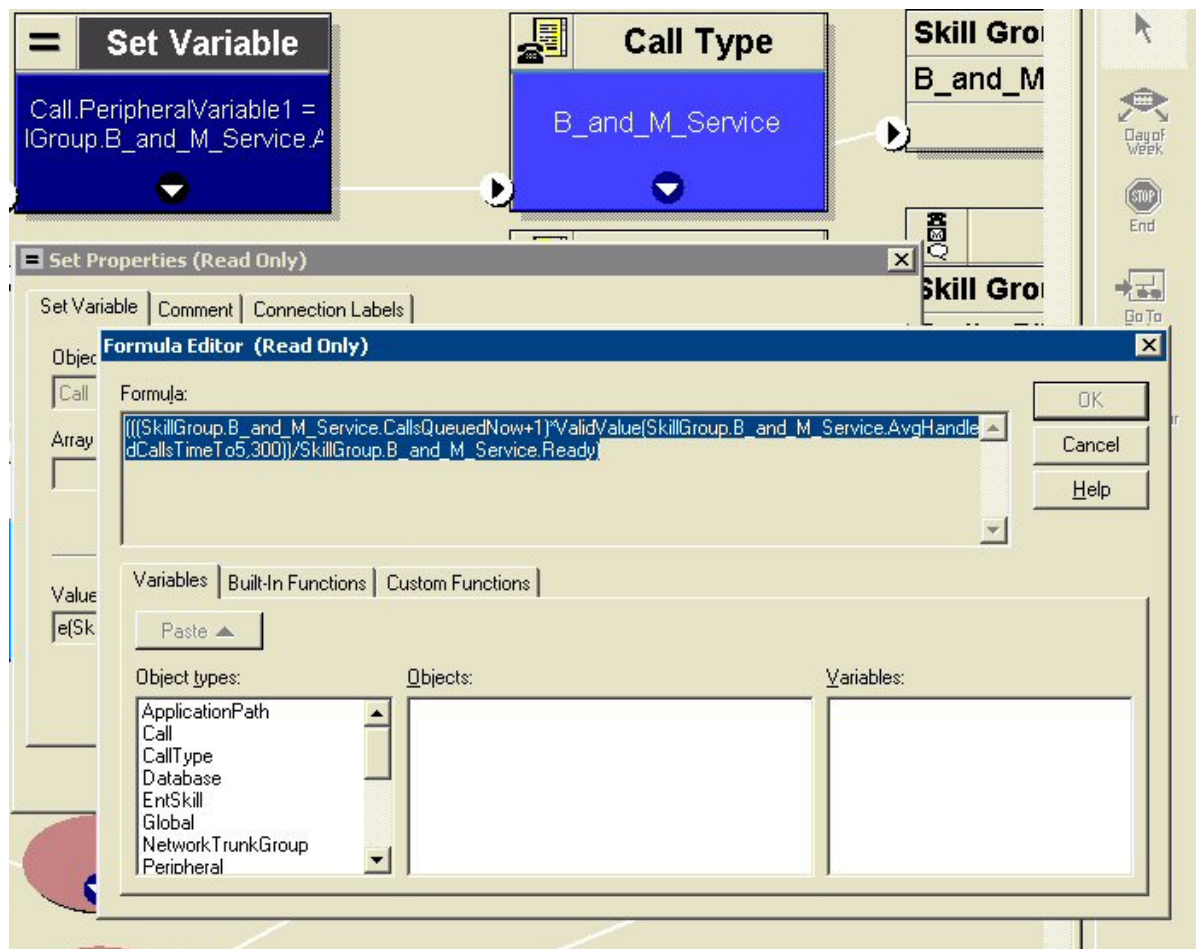


Routing Logic and Configuration

- **SET node**
- **Check Routes**
- **Router Log Viewer**
- **Web View**
- **Help - Database Schema**
- **Script Real Time display**

SET Node

- Store values used in routing decisions in Termination Call Detail records
- Typically stored in Peripheral Variables
- Concatenate to store multiple values in one variable location



Check Routes

- Choose Script
- Choose Dialed Number
- Choose Script
- Check routes, peripheral targets, and labels
- Errors in bottom window

Check Routes for Script

This dialog will validate the routes used by a script to determine that they are OK for the calls that will be routed through the script. First, you must select the routing client sending the calls, the dialed number to be sent, and the script.

Routing Client:

Dialed Number:

Script:

Version:

Network Transfer Call

Use Network Transfer

Routing Client:

Dialed Number:

Select routes used by script, or a translation route used in script:

Peripheral Targets for Selected Route DNIS and Network Trunk Group:

Labels for selected Peripheral

Routes used by selected script:

- B_and_M_Service_Route (IPTA)
- B_and_M_Service_Route, Using IPCC_TR1
- BMW_Bike_Route (IPTA)
- BMW_Bike_Route, Using IPCC_TR1
- Exotic_Bike_Route (IPTA)
- Exotic_Bike_Route, Using IPCC_TR1

View Translation Route

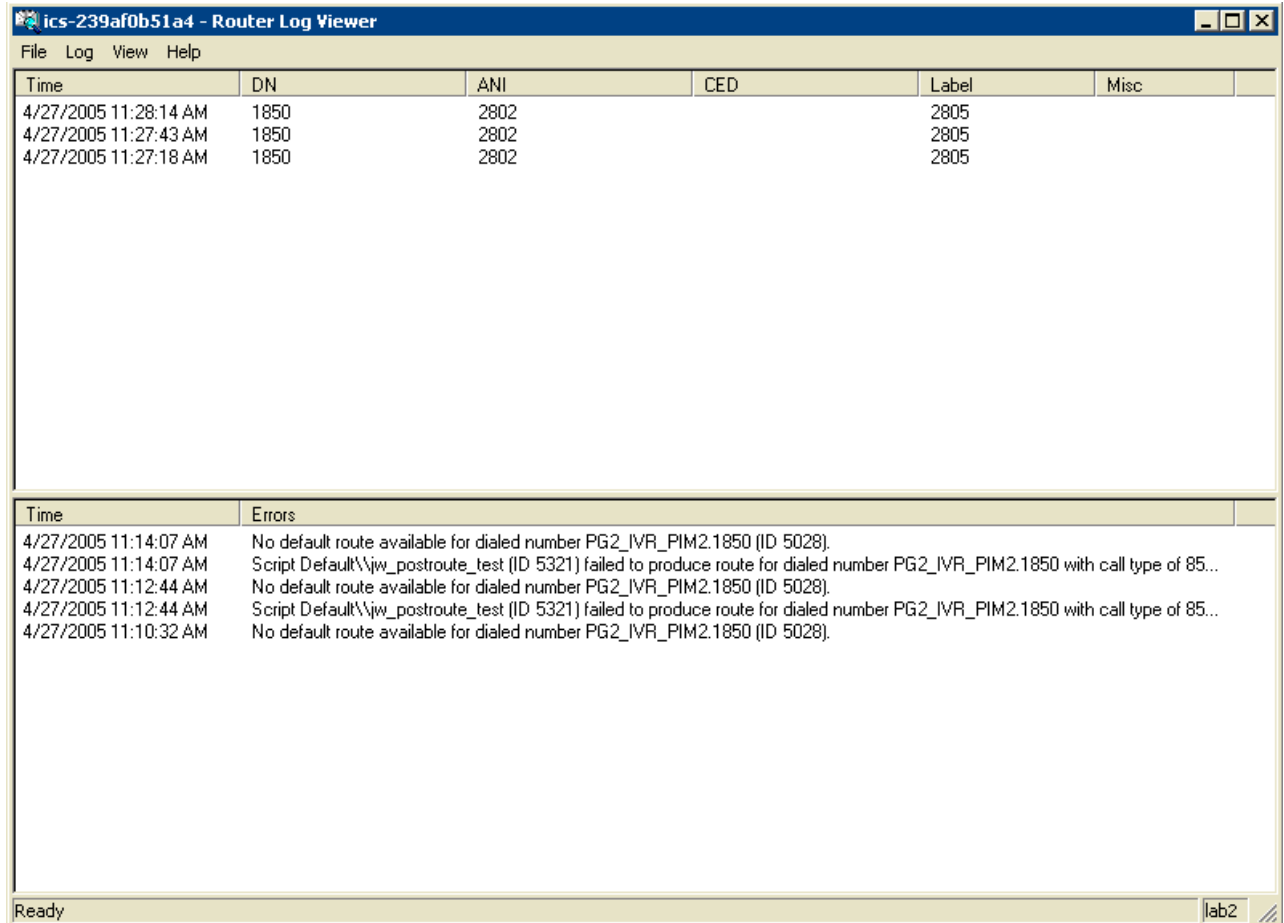
Errors:

- Translation route IPCC_TR1 has service route members, but route B_and_M_Service_Route is not for a service.
- Translation route IPCC_TR1 has service route members, but route BMW_Bike_Route is not for a service.
- Translation route IPCC_TR1 has service route members, but route Exotic_Bike_Route is not for a service.

lab2

Router Log Viewer

- Shows all calls placed
- Time, DN, ANI, CED, Label, etc.
- Any configuration errors noted in bottom window



The screenshot shows a window titled "ics-239af0b51a4 - Router Log Viewer" with a menu bar (File, Log, View, Help). The main area is divided into two sections. The top section is a table with columns: Time, DN, ANI, CED, Label, and Misc. The bottom section is a table with columns: Time and Errors.

Time	DN	ANI	CED	Label	Misc
4/27/2005 11:28:14 AM	1850	2802		2805	
4/27/2005 11:27:43 AM	1850	2802		2805	
4/27/2005 11:27:18 AM	1850	2802		2805	

Time	Errors
4/27/2005 11:14:07 AM	No default route available for dialed number PG2_IVR_PIM2.1850 (ID 5028).
4/27/2005 11:14:07 AM	Script Default\vw_postroute_test (ID 5321) failed to produce route for dialed number PG2_IVR_PIM2.1850 with call type of 85...
4/27/2005 11:12:44 AM	No default route available for dialed number PG2_IVR_PIM2.1850 (ID 5028).
4/27/2005 11:12:44 AM	Script Default\vw_postroute_test (ID 5321) failed to produce route for dialed number PG2_IVR_PIM2.1850 with call type of 85...
4/27/2005 11:10:32 AM	No default route available for dialed number PG2_IVR_PIM2.1850 (ID 5028).

Ready |lab2

Database Schema

- Typical MS help format
- Alphabetical, keyword, or search modes
- Defines table location of all fields
- Explanation of field
- Data type

The screenshot shows the 'ICM Database Schema Help' window. The left pane lists various tables, with 'Service_Real_Time Table' selected. The right pane displays the table's details, including a description and a list of fields with their data types and nullability.

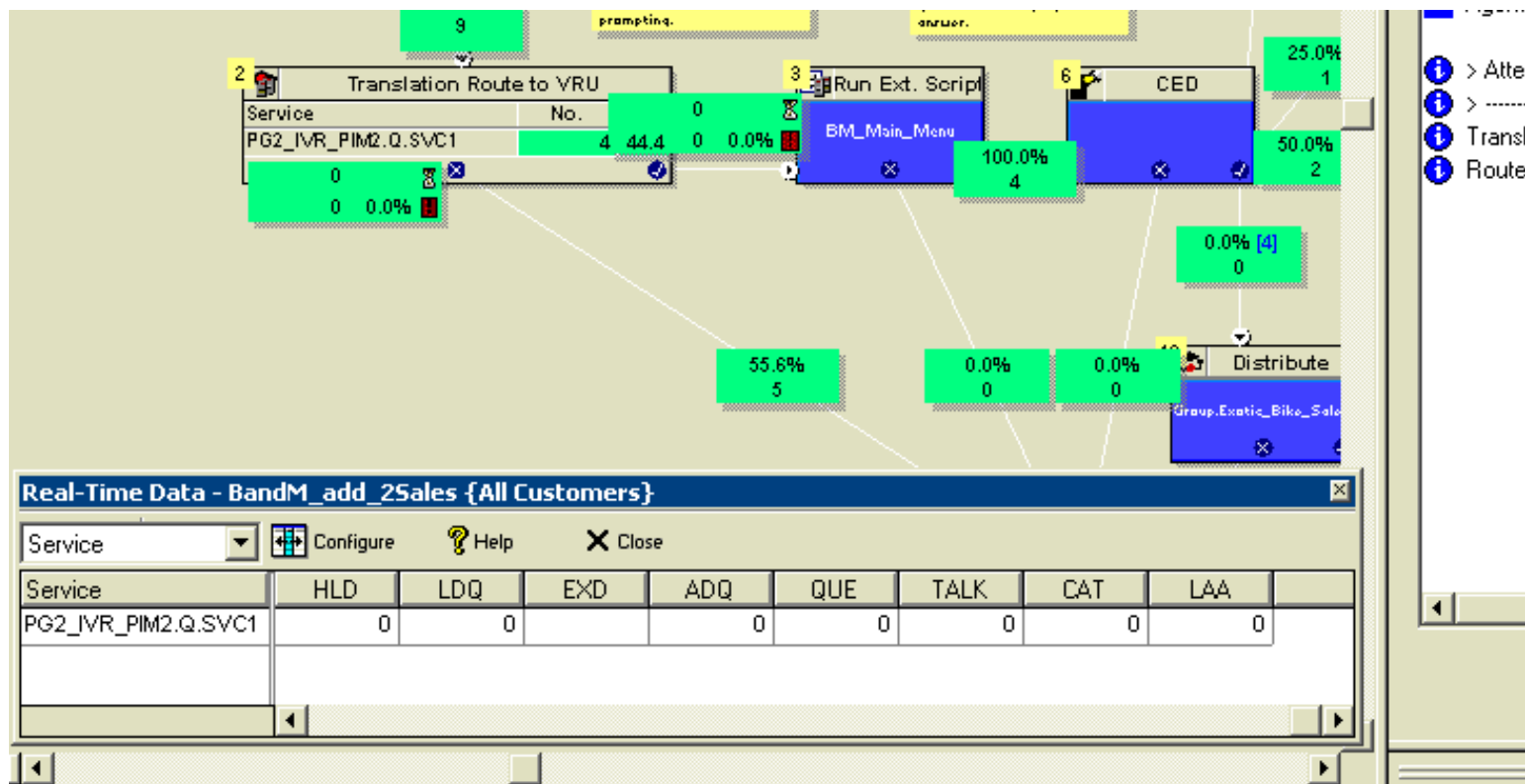
Service_Real_Time Table

Local database only.
Contains [real.time](#) information about each service.
The ICM software automatically generates a Service_Real_Time record for each service.

CallsOutHalf	Number of outbound calls made by agents for the service during the current half-hour interval.	int	NULL
CallsOutNow	Number of outbound calls by agents for the service that are currently in progress.	int	NULL
CallsOutTo5	Number of outbound calls made by agents for the service during the current five-minute interval.	int	NULL
CallsOutToday	Number of outbound calls made by agents for the service since midnight.	int	NULL
CallsQNow	Number of calls in queue for the service now at the peripheral.	int	NULL
CallsQNowTime	Total time of all calls to the service currently in queue.	int	NULL
CallsRoutedHalf	Number of calls routed to this service by the ICM software for the current half-hour interval.	int	NULL
CallsRoutedToday	Number of calls routed to this service by the ICM software since midnight.	int	NULL
CallsTerminatedOtherHalf	Number of calls offered to the service but not otherwise accounted for during the current half-hour interval. These are calls that do not fit into the criteria for handled, abandoned, or transferred calls. They were terminated for other reasons, which may include drop/no answer, forced busy, or timed out.	int	NULL
CallsTerminatedOtherTo5	Number of calls offered to the service but not otherwise accounted for during the current five-minute interval. These are calls that do not fit into the criteria for handled, abandoned, or transferred calls. They were	int	NULL

Script Real Time

- Shows current agent data
- Predict routing behavior and check against monitor mode results



System Troubleshooting

- **Rttest**
 - “**expr**” and “**watch**”
 - “**dump_vars**”

rttest

Doc #20428 – “The Cisco ICM rttest utility”

http://www.cisco.com/en/US/partner/products/sw/custcosw/ps1001/products_tech_note09186a00800ac69b.shtml

How to Run and Interpret rttest

Type **rttest** at a command prompt with **/help** or **/?** this gives you a syntax usage statement. For example:

```
c:\icr\cicrl\ra\logfiles>rttest /?
Version: Release 4.0, Build 04624
Usage: rttest [/f InputFile] [/system SystemName]
        [/cust Customer]
        [/node ICRNode] [/pipe OutputPipe] [/debug] [/stop] [/help] [/?]
```

The command line options required to invoke **rttest** are:

/cust Customer	Where Customer is a 3, 4, or 5 letter acronym that signifies the ICM customer instance. Refer to ICM Server Naming Conventions .
/node ICRNode	Where ICRNode is either routera or routerb, depending on the router rttest to run. Refer to ICM Server Naming Conventions .

rttest: “expr”

The expr command is useful for testing mathematical formulas used in routing scripts, or for determining the value of a particular ICM expression. This is a useful tool if you are attempting to validate that a particular expression or formula results in an actual value, versus an error condition (usually a divide by zero).

```
rttest: expr /?
```

```
Usage: expression Expression [/long LongResult] [/float FloatResult]
       [/char CharResult] [/wild Wildcard] [/invalid] [/error]
       [/disable] [/help] [/?]
```

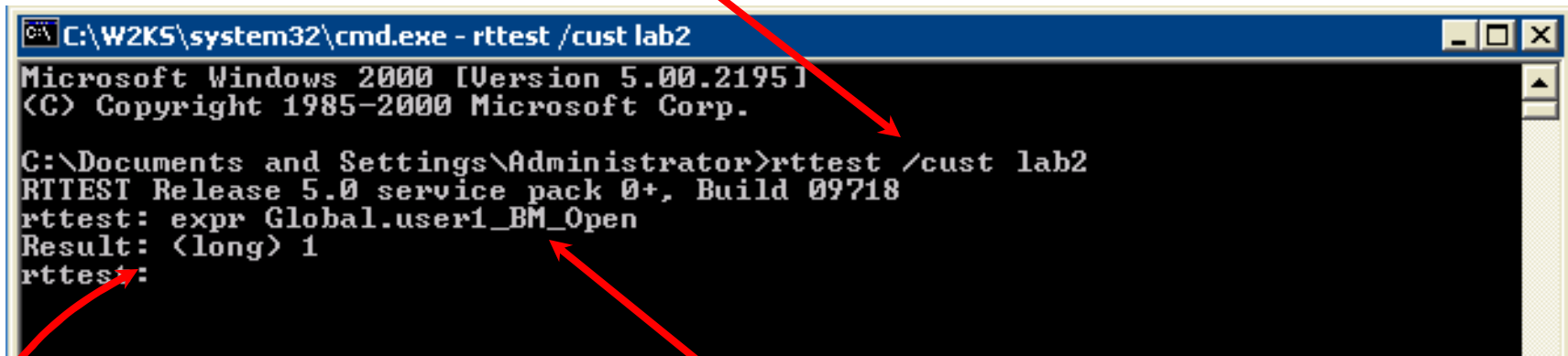
If you ran the following command, rttest would display the appropriate results for CallsAnsweredTo5 for the specified skillgroup. If you modify the properties of your NT command prompt to allow for inserts and quick edit, you can copy and paste from the script editor or call tracer into rttest.

```
rttest: expr SkillGroup.G3_1.skillgroup1.CallsAnsweredTo5
```

rttest: “expr”

Use rttest expression command to confirm that your variable

1. Command string to open utility: `rttest /cust lab2`



```
C:\W2K5\system32\cmd.exe - rttest /cust lab2
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

C:\Documents and Settings\Administrator>rttest /cust lab2
RTTEST Release 5.0 service pack 0+, Build 09718
rttest: expr Global.user1_BM_Open
Result: (long) 1
rttest:
```

2. Command string to run expression utility and check current value of global variable: `expr Global.user1_BM_Open`
3. Results: (long) 1 ... so the current value for this variable is “1” OR “YES” therefore the business is OPEN

rttest: “watch”

- The watch command “extends” the expression (“expr”) command by writing an entry in the router logs (rtr) each time the value changes for the configured expression
- Can run the watch command many times to configure multiple expressions
- This is a very effective tool for troubleshooting historical call events
- Combine with TCD, RCD historical records (with SET node data), logs, and Peripheral reports to get a very complete picture of call routing circumstances

rttest: “watch”

1. Watch command for several global variables

```
rttest: watch Global.user1_BM_Open
Watch 0 added.
rttest: watch Global.user1_BM_Holiday
Watch 1 added.
rttest: watch Global.user2_BM_Open
Watch 2 added.
```

2. Results in Router (rtr) log

```
12:57:02 Trace: Router detected PG setting
actual HH value for current HH.
13:16:16 Trace: Global.user1_BM_Open = 1
13:23:05 Trace: Global.user1_BM_Holiday = 3
13:23:39 Trace: Global.user2_BM_Open = 1
13:28:00 Trace: Global.user1_BM_Holiday = 1
13:28:01 Trace: Global.user1_BM_Holiday = 3
13:29:01 Trace: Global.user1_BM_Holiday = 1
```

NOTE: Value is written to logs ONLY when it CHANGES not every time the Administrative Script is runs.

