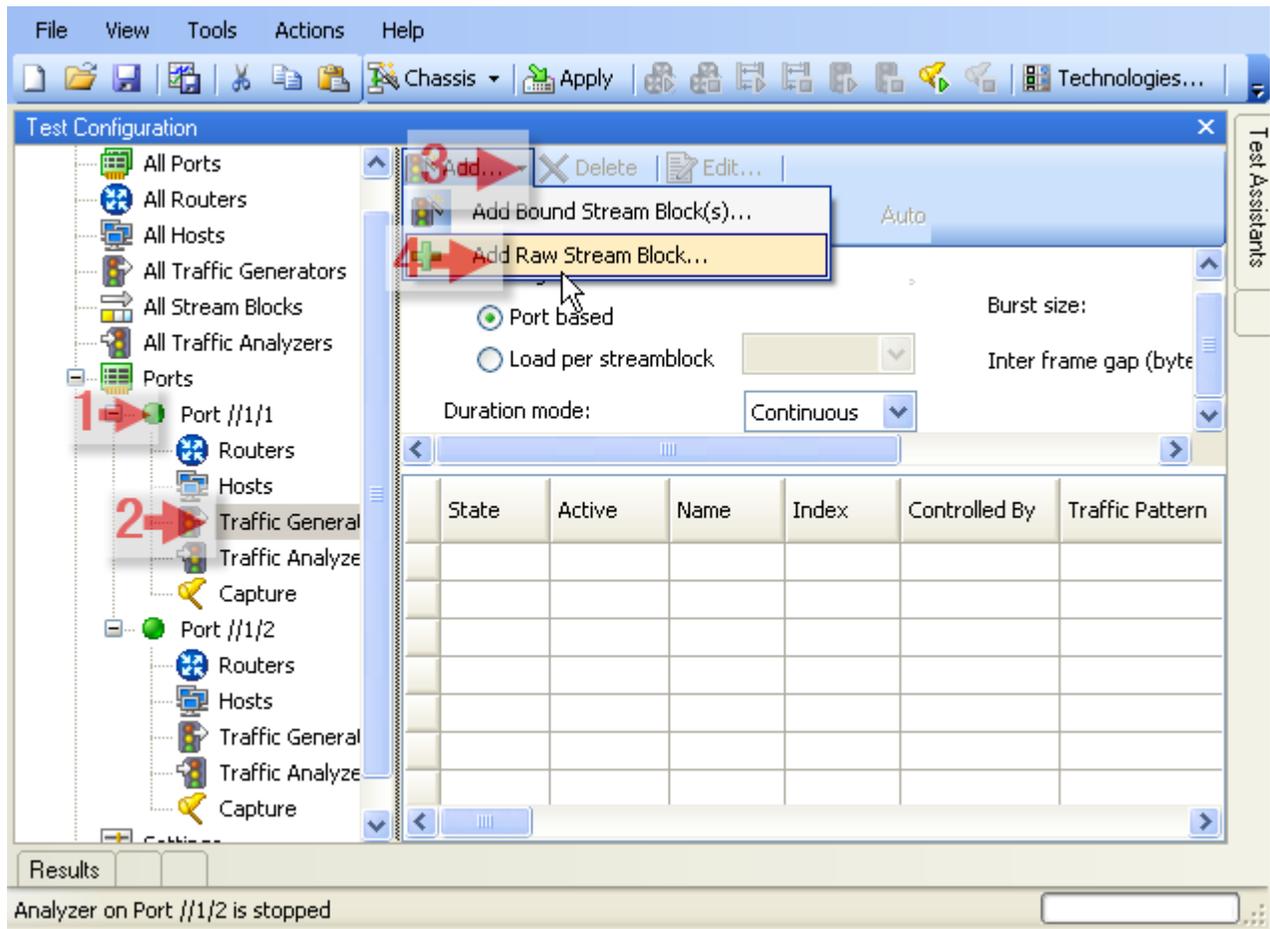


## Spirent TestCenter

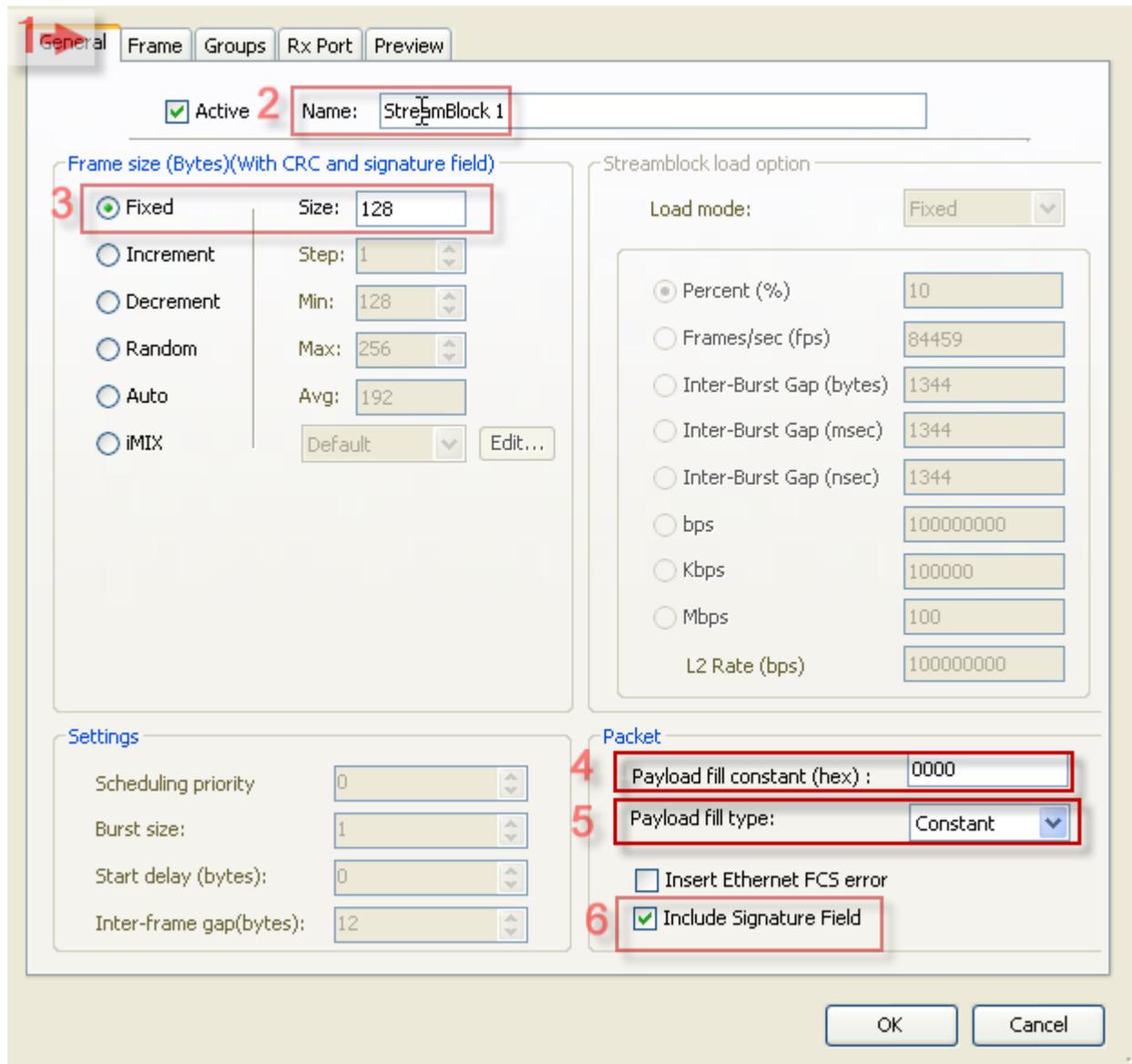
两端口使用自定义方式建立互发的带 **VLAN** 的二层数据流



# 1 运行 STC applicaton 软件，占用端口后，在端口 1 上增加 Raw Stream Block，

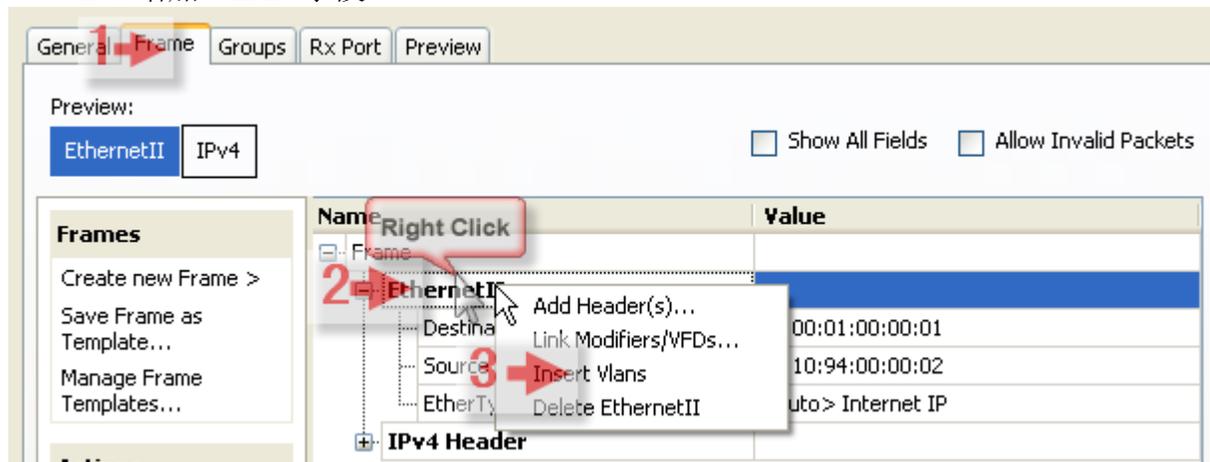


## 2a 在数据编辑窗口的 **General** 页上定义所要发送的数据的参数



## 2b 在数据编辑窗口的 **Frame** 页上定义所要发送的数据的参数

### 2b1 增加 VLAN 字段



2b2 修改 MAC 地址和 VLAN 字段后点击 OK 按钮。

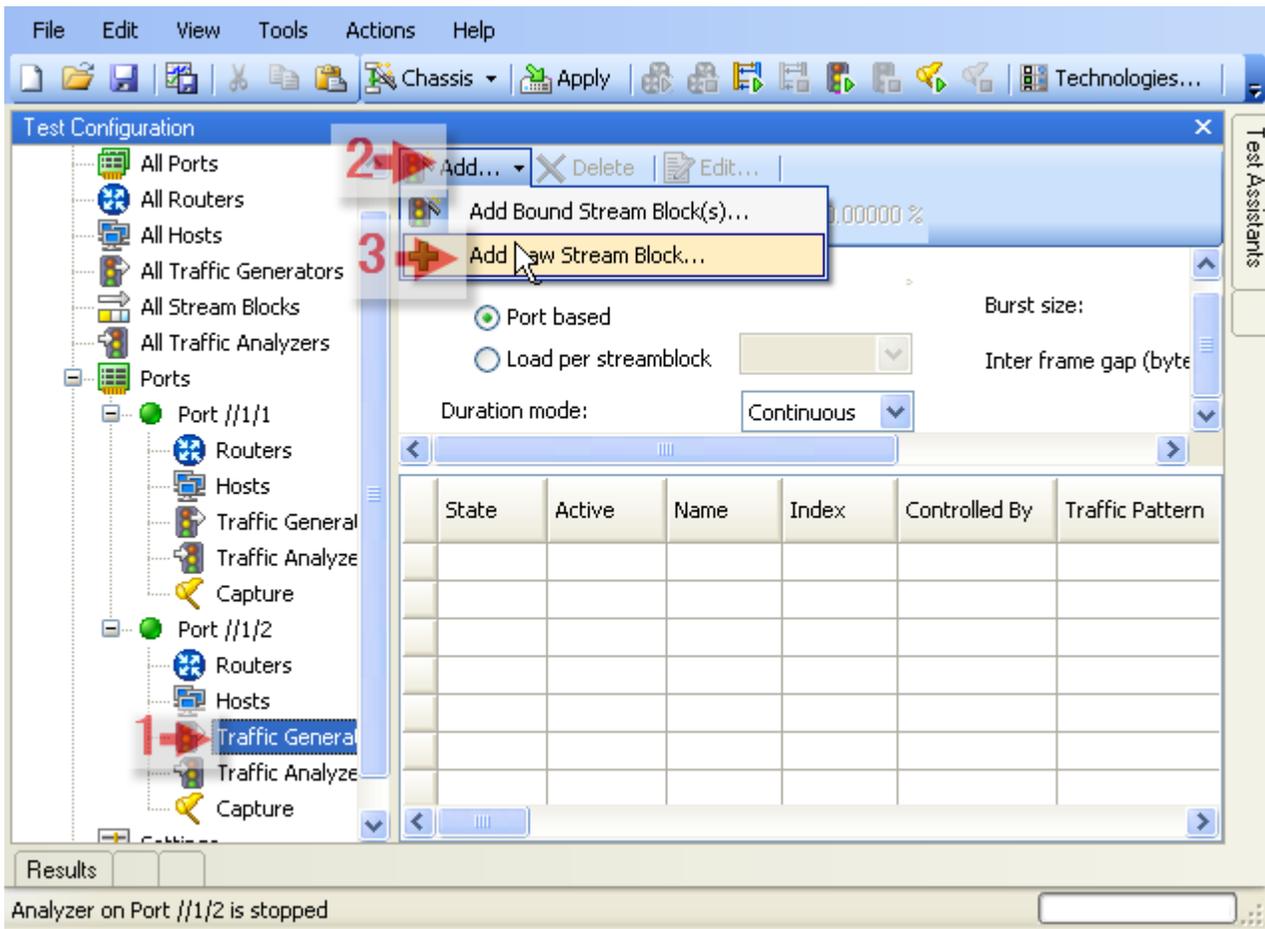
The screenshot shows a network configuration interface with the following components:

- General** tab selected.
- Preview:** EthernetII selected, IPv4 also visible. Checkboxes for "Show All Fields" and "Allow Invalid Packets" are present.
- Frames** section: "Create new Frame >", "Save Frame as Template...", "Manage Frame Templates...".
- Actions** section: "Add Header(s)...", "Link Modifiers/WFDs...", "Delete IPv4 Header".
- Others** section: "Expand All", "Collapse All".
- Main Table:** A tree view showing "EthernetII" and "IPv4 Header" with various fields and values. Red annotations 1-8 highlight specific fields.
- Hex Editor:** Shows hex and ASCII data for the packet structure.
- Navigation:** "Navigate streamblocks: (1 of 2)" with play/pause buttons and a large red "9" button with an arrow pointing to "OK".

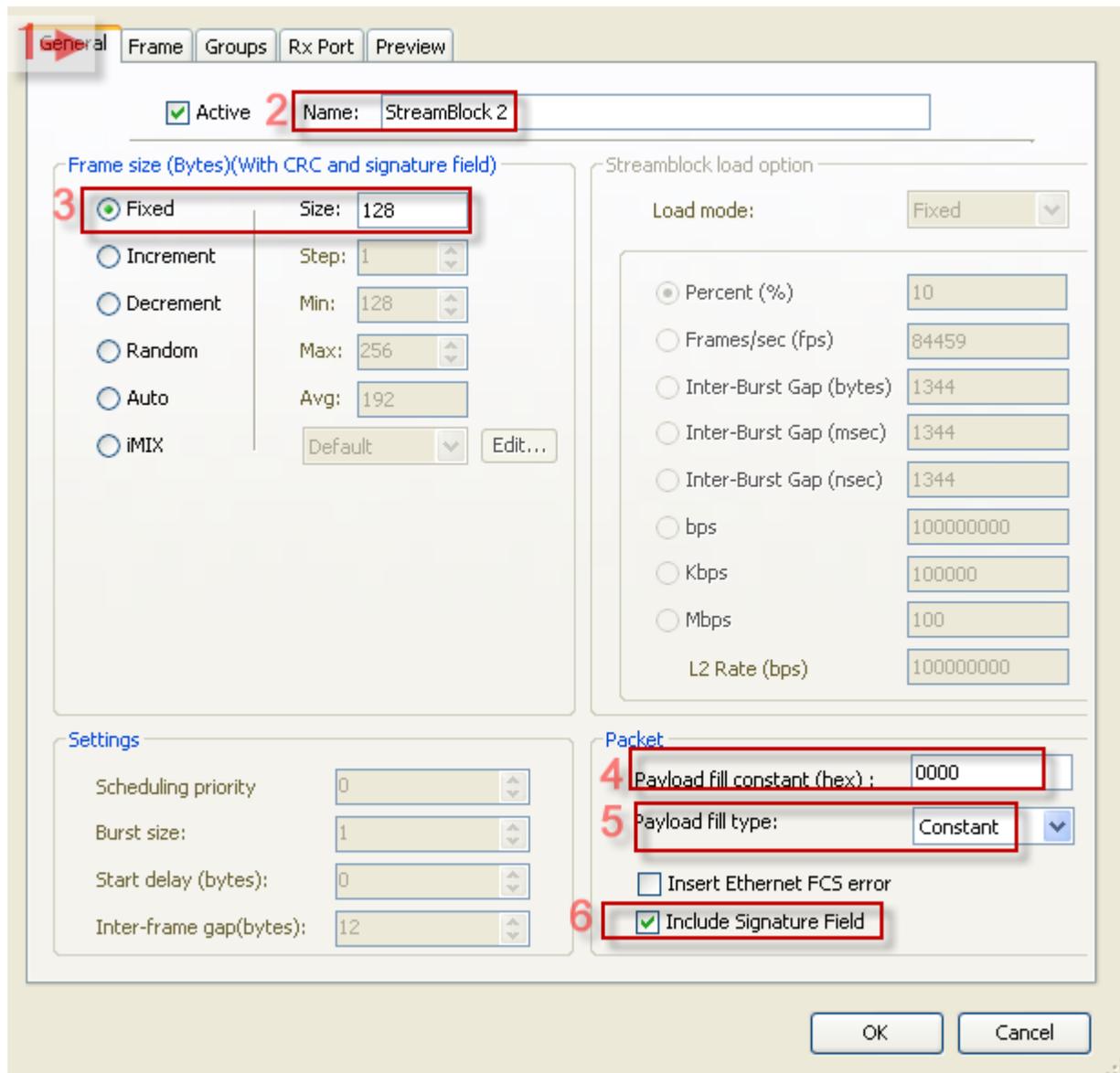
Name	Value
Frame	
EthernetII	
Destination MAC	00:00:02:00:00:02
Source MAC	00:00:01:00:00:01
Vlans	
Vlan	
Type (hex)	8100
Priority (bits)	000
CFI (bit)	0
ID (int)	100
EtherType (hex)	<auto> Internet IP
IPv4 Header	
ToS/DiffServ	tos (0x00)
Total length (int)	<auto> 20
Time to live (int)	255
Protocol (int)	<auto> Experimental
Source	192.85.1.1
Destination	192.85.1.2
Header Options	
Gateway	192.85.1.2

```
0000: 55 55 55 55 55 55 55 D5 00 00 02 00 00 02 00 00  UUUUUUUU  . . . . .
0010: 01 00 00 01 81 00 00 64 08 00 45 00 00 14 00 00  . . . . | . . d . E . . . .
0020: 00 00 FF FD 38 3F C0 55 01 01 C0 55 01 02  . . . . .  . . . . .
```

### 3 在端口 2 上增加 Raw Stream Block,

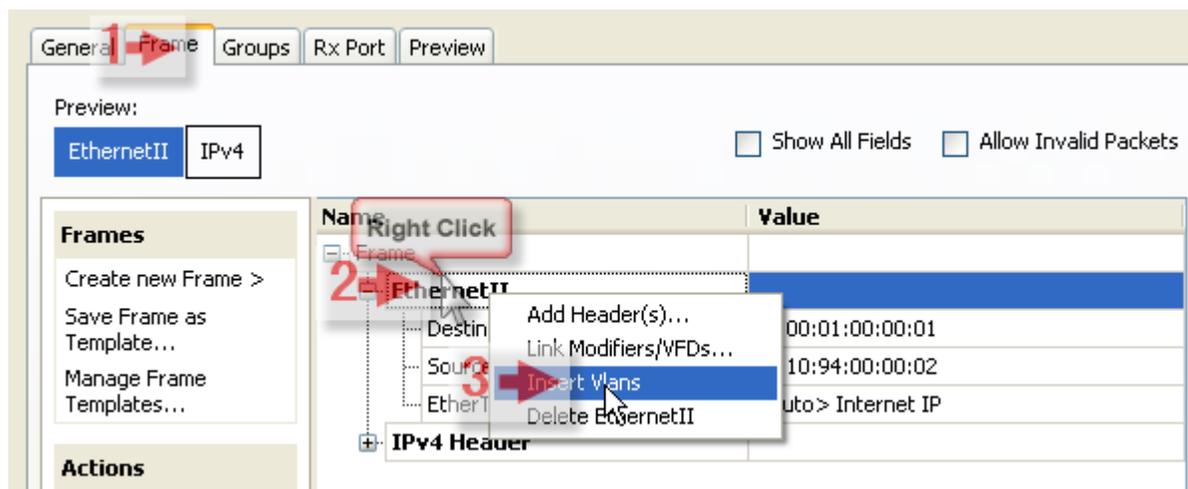


#### 4a 在 2 端口的数据编辑窗口的 **General** 页上定义所要发送的数据的参数



#### 4b 在 2 端口的数据编辑窗口的 **Frame** 页上定义所要发送的数据的参数

4b1 增加 VLAN 字段



4b2 修改 MAC 地址和 VLAN 字段后点击 OK 按钮。

The screenshot shows a network configuration window with the following structure:

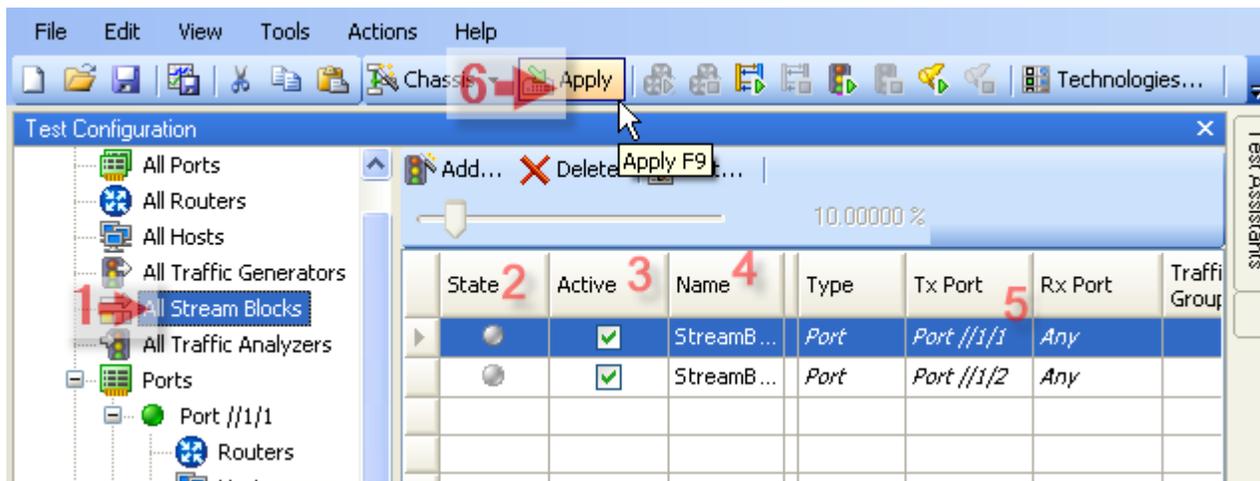
- Preview: EthernetII (selected), IPv4
- Options:  Show All Fields,  Allow Invalid Packets
- Left Panel:
  - Frames: Create new Frame >, Save Frame as Template..., Manage Frame Templates...
  - Actions: Add Header(s)..., Link Modifiers/VFDs..., Delete IPv4 Header
  - Others: Expand All, Collapse All
- Main Table:

Name	Value
Frame	
EthernetII	
Destination MAC	1 00:00:01:00:00:01
Source MAC	2 00:00:02:00:00:02
Vlans	
Vlan	
Type (hex)	8100
Priority (bits)	3 000
CFI (bit)	4 0
ID (int)	5 100
EtherType (hex)	<auto> Internet IP
IPv4 Header	
ToS/DiffServ	6 tos (0x00)
Total length (int)	<auto> 20
Time to live (int)	255
Protocol (int)	<auto> Experimental
Source	7 192.85.1.2
Destination	8 192.85.1.1
Header Options	
Gateway	192.85.1.1
- Hex Editor:

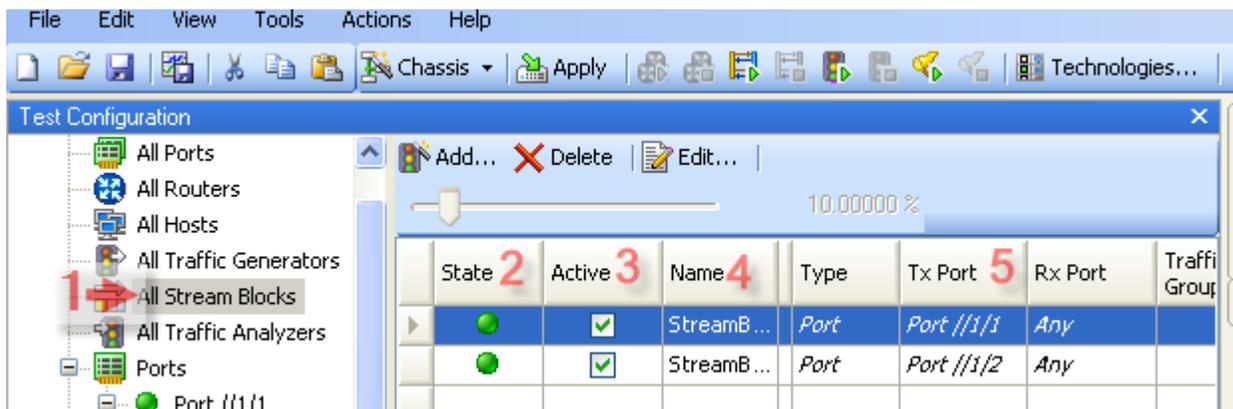
```
0000: 55 55 55 55 55 55 55 D5 00 00 01 00 00 01 00 00  U U U U U U U 0 . . . . .
0010: 02 00 00 02 81 00 00 64 08 00 45 00 00 14 00 00  . . . . I . . d . E . . . .
0020: 00 00 FF FD 38 3F C0 55 01 02 C0 55 01 01      . . y y 8 ? A U . . A U . .
```
- Navigation: (2 of 2) [Back] [Next] [OK] [Cancel]

5 点击 Apply 将配置下发到 STC 机箱上。

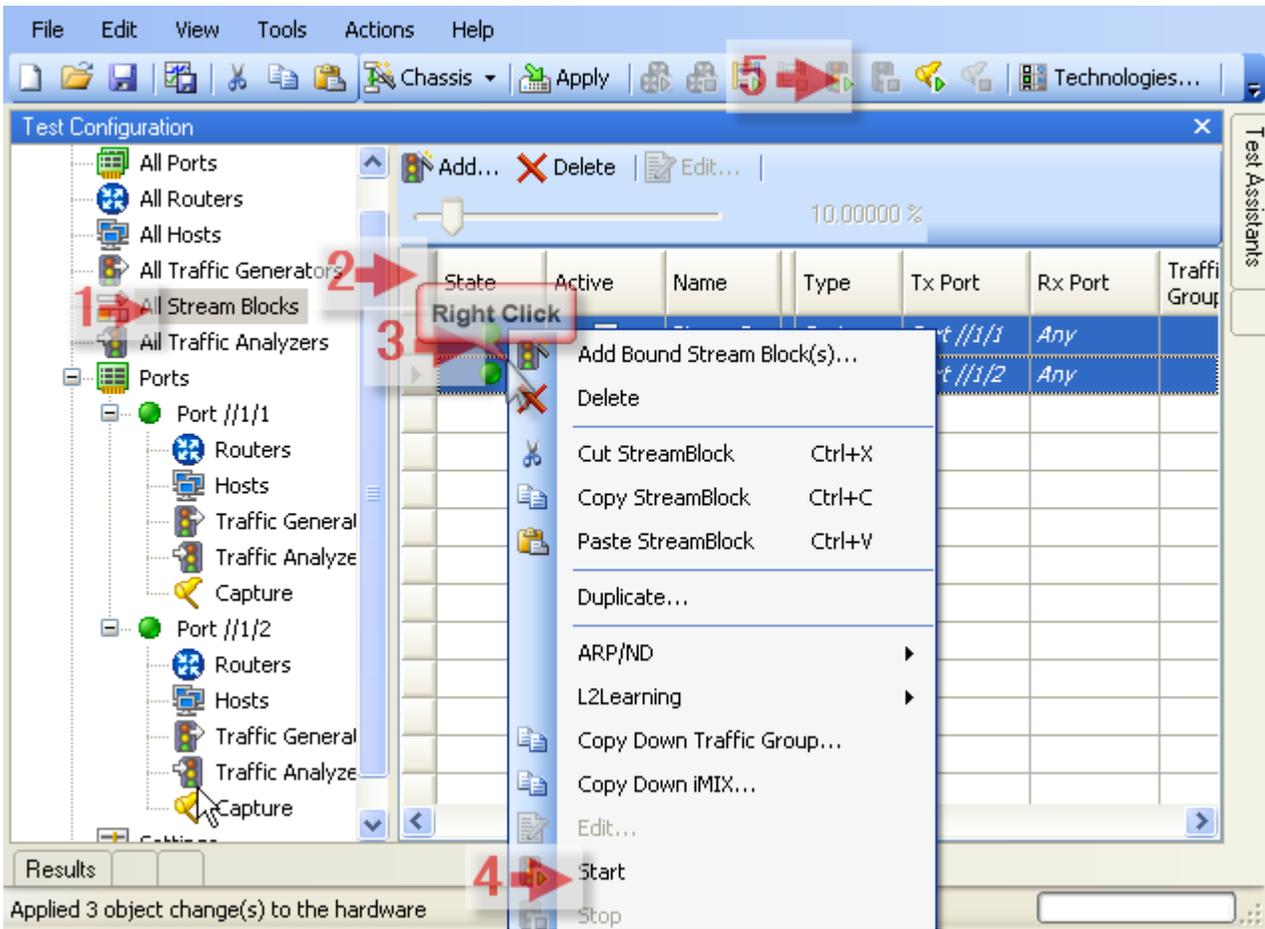
5a 在配置下发前或下发没有完成时，State 2 为灰色，表示在数据流没有准备好。



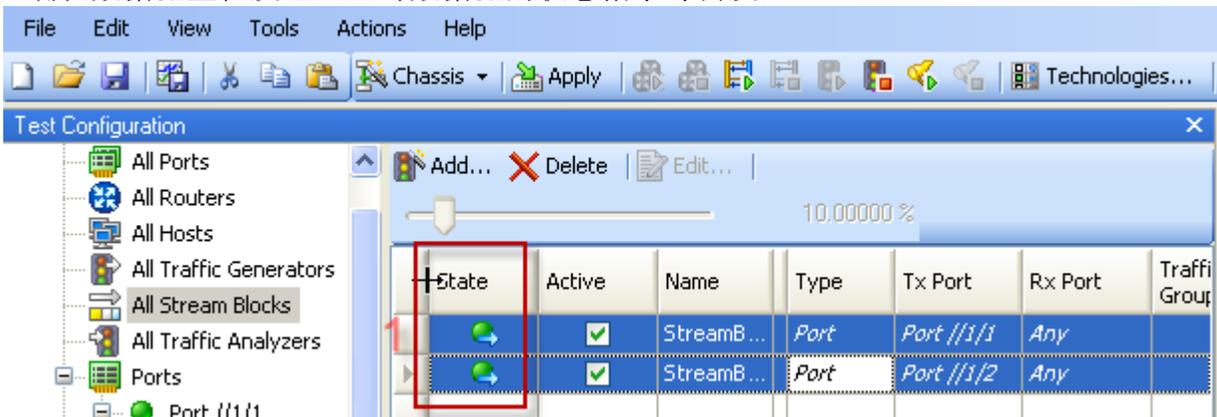
5b 在下发完成后，State 2 为绿色，表示在数据流准备好，可以发送。



6 通过点击  选择全部的数据流，在数据流处点击右键发送数据，也可以选择  直接使所有端口开始发送数据。



7 确认数据流正在发送，此时数据流的状态指示等会发生。



## 8 观察统计结果。

8a 选择按数据流详细结果方式观察统计。

The screenshot shows the Spirent TestCenter interface. At the top is a menu bar (File, Edit, View, Tools, Actions, Help) and a toolbar. Below is the 'Test Configuration' pane showing a tree view with 'All Ports' and 'All Routers' selected, and a progress indicator at 10.00000%. The main area is titled 'Results' and contains a 'Port Traffic > Basic Traffic Results' table. A context menu is open over the table, with a red arrow '2' pointing to the 'Change Result View' dropdown. The menu options include 'Create Table View...', 'Create Chart View...', 'Customize View...', 'Reset View', 'Save View Layout', 'Enable Charts...', 'Organize Views...', 'Port Traffic', 'Stream Results', 'Port Protocols', and 'Router Protocols'. A red arrow '3' points to 'Stream Results', which has opened a sub-menu. A red arrow '4' points to 'Retailed Stream Results' in the sub-menu. A red arrow '1' points to the 'Results' tab at the bottom left. The status bar at the bottom shows 'Generator on Port //1/1 is running'.

Port Name	Total Tx Count (Frames)	Total Rx Count (Frames)	Rate (bps)	Generator Count
Port //1/1	62,121,237	47,...	0	62,121,237
Port //1/2	62,159,244	47,...	8	62,159,244

- Change Result View
- Create Table View...
- Create Chart View...
- Customize View...
- Reset View
- Save View Layout
- Enable Charts...
- Organize Views...
- Port Traffic
- Stream Results
  - Traffic Group Results
  - Filtered Stream Results
  - Interesting Stream Results
  - Retailed Stream Results
  - Stream Block Results
- Port Protocols
- Router Protocols

## 9 观察时延统计结果。

Test Configuration

Spirent TestCenter

All Ports

All Routers

10.00000%

统计结果清零

Results

Stream Results > Detailed Stream Results | Change Result View | 1 of 1

Select Tx Ports: All Ports | Select Rx Ports: All Ports | Change Counter Mode:

Basic Mode

1 Basic Counters | Errors | Basic Sequencing | Advanced Sequencing | Histograms

Name/ID <b>3</b>	Short Term Avg Latency (us) <b>4</b>	Avg Latency (us) <b>5</b>	Min Latency (us) <b>6</b>	Max Latency (us) <b>7</b>
StreamBlock 1/65536	7.09	7.09	6.49	7.86
StreamBlock 2/1310...	6.82	6.82	6.48	7.56

Click and Drag

2

Results | Validation Errors | Log - 46 messages

Applied 4 object change(s) to the hardware

## 10 观察丢包统计结果。

Test Configuration

Spirent TestCenter

- All Ports
- All Routers

10.00000 %

Results

Stream Results > Detailed Stream Results | Change Result View | 1 of 1

Select Tx Ports: All Ports | Select Rx Ports: All Ports | Change Counter Mode:

Basic Mode

Basic Counters | Errors | Basic Sequencing | **Advanced Sequencing** | Histograms

Name/ID	ate Count Frames)	Dropped Rate (fps)	Dropped Frame Perce...	In-order Rate (fps)	Reorder
StreamBlock 1/65536		0	0	84,459	0
StreamBlock 2/1310...		0	0	84,459	0

Results | Validation Errors | Log - 46 messages

Applied 4 object change(s) to the hardware

## 11 观察抖动统计结果。

11a 设置为 Jitter Mode。并点击 Apply 设备 STC 的结果观察模式。

The screenshot shows the Spirent TestCenter software interface. The 'Results' window is open, displaying 'Stream Results > Detailed Stream Results'. The 'Change Counter Mode' dropdown is set to 'Jitter Mode'. The table below shows performance metrics for 'StreamBlock 2/1310...':

Mode	Rate Count (Frames)	Dropped Rate (fps)	Dropped Frame Percentage	In-order Rate (fps)	Reorder
Basic Mode		0	0	84,458	0
Jitter Mode		0	0	84,459	0

At the bottom of the interface, a status bar indicates 'Applied 4 object change(s) to the hardware'.

11b 观察抖动统计结果

File Edit View Tools Actions Help

Chassis Apply Technologies...

Test Configuration

Spirent TestCenter

All Ports

All Routers

10.00000 %

Results

Stream Results > Detailed Stream Results | Change Result View | 1 of 1

Select Tx Ports: All Ports | Select Rx Ports: All Ports | Change Counter Mode:

Jitter Mode

Basic Counters Errors Basic Sequencing Advanced Sequencing Histograms

Name/ID	3	Latency (us)	4	Short Term Avg Jitter (us)	5	Avg Jitter (us)	6	Min Jitter (us)	7	Max Jitter (us)	8	Exp Cou
StreamBlock 1/65536	3		0.31	5	0.31	6	0	7	1.23	8	86,	
StreamBlock 2/1310...	4		0.28		0.28		0		3.33		86,	

Click and Drag

Results | Validation Errors | Log - 55 messages

Applied 3 object change(s) to the hardware