

Университет ИТМО

Лабораторная работа №1
по предмету
Администрирование вычислительных систем

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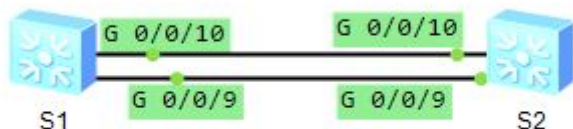
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Часть 1. Конфигурирование STP

Изображение реализованной топологии



Шаг 1. Настройка STP и проверка конфигурации

Включение STP и установление S1 в качестве корневого устройства

S1	<pre><Huawei>sys [Huawei]stp mode stp Info: This operation may take a few seconds. Please wait for a moment...done. [Huawei]stp root primary</pre>
S2	<pre><Huawei>sys [Huawei]stp mode stp Info: This operation may take a few seconds. Please wait for a moment...done. [Huawei]stp root secondary</pre>

Вывод краткой информации об STP и статуса STP портов

S1	<pre>[Huawei]display stp brief MSTID Port Role STP State Protection 0 GigabitEthernet0/0/9 DESI FORWARDING NONE 0 GigabitEthernet0/0/10 DESI FORWARDING NONE [Huawei]display stp interface GigabitEthernet 0/0/10 -----[CIST Global Info][Mode MSTP]----- CIST Bridge :0 .4c1f-cc27-4ff7 Config Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 Active Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 CIST Root/ERPC :0 .4c1f-cc27-4ff7 / 0 CIST RegRoot/IRPC :0 .4c1f-cc27-4ff7 / 0 CIST RootPortId :0.0 BPDU-Protection :Disabled CIST Root Type :Primary root TC or TCN received :7 TC count per hello :0 STP Converge Mode :Normal Time since last TC :0 days 0h:4m:16s Number of TC :7</pre>
----	---

	<pre> Last TC occurred :GigabitEthernet0/0/10 ----[Port10(GigabitEthernet0/0/10)][FORWARDING]---- Port Protocol :Enabled Port Role :Designated Port Port Priority :128 Port Cost(Dot1T) :Config=auto / Active=20000 Designated Bridge/Port :0.4c1f-cc27-4ff7 / 128.10 Port Edged :Config=default / Active=disabled Point-to-point :Config=auto / Active=true Transit Limit :147 packets/hello-time Protection Type :None Port STP Mode :STP Port Protocol Type :Config=auto / Active=dot1s BPDU Encapsulation :Config=stp / Active=stp PortTimes :Hello 2s MaxAge 20s FwDly 15s RemHop 20 TC or TCN send :17 TC or TCN received :0 BPDU Sent :134 TCN: 0, Config: 125, RST: 0, MST: 9 BPDU Received :1 TCN: 0, Config: 1, RST: 0, MST: 0 </pre>
S2	<pre> [Huawei]display stp brief MSTID Port Role STP State Protection 0 GigabitEthernet0/0/9 ROOT FORWARDING NONE 0 GigabitEthernet0/0/10 ALTE DISCARDING NONE [Huawei]disp stp interface GigabitEthernet 0/0/9 -----[CIST Global Info][Mode STP]----- CIST Bridge :4096 .4c1f-cc19-515d Config Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 Active Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 CIST Root/ERPC :0 .4c1f-cc27-4ff7 / 20000 CIST RegRoot/IRPC :4096 .4c1f-cc19-515d / 0 CIST RootPortId :128.9 BPDU-Protection :Disabled CIST Root Type :Secondary root TC or TCN received :72 TC count per hello :0 STP Converge Mode :Normal Time since last TC :0 days 0h:5m:53s Number of TC :6 Last TC occurred :GigabitEthernet0/0/9 ----[Port9(GigabitEthernet0/0/9)][FORWARDING]---- Port Protocol :Enabled Port Role :Root Port Port Priority :128 Port Cost(Dot1T) :Config=auto / Active=20000 Designated Bridge/Port :0.4c1f-cc27-4ff7 / 128.9 Port Edged :Config=default / Active=disabled Point-to-point :Config=auto / Active=true Transit Limit :147 packets/hello-time </pre>

```

Protection Type      :None
Port STP Mode       :STP
Port Protocol Type   :Config=auto / Active=dot1s
BPDU Encapsulation   :Config=stp / Active=stp
PortTimes           :Hello 2s MaxAge 20s FwDly 15s RemHop 0
TC or TCN send       :2
TC or TCN received   :36
BPDU Sent            :3
                    TCN: 2, Config: 1, RST: 0, MST: 0
BPDU Received        :412
                    TCN: 0, Config: 412, RST: 0, MST: 0

[Huawei]disp stp interface GigabitEthernet 0/0/10
-----[CIST Global Info][Mode STP]-----
CIST Bridge          :4096 .4c1f-cc19-515d
Config Times         :Hello 2s MaxAge 20s FwDly 15s MaxHop 20
Active Times         :Hello 2s MaxAge 20s FwDly 15s MaxHop 20
CIST Root/ERPC       :0 .4c1f-cc27-4ff7 / 20000
CIST RegRoot/IRPC    :4096 .4c1f-cc19-515d / 0
CIST RootPortId      :128.9
BPDU-Protection      :Disabled
CIST Root Type       :Secondary root
TC or TCN received   :72
TC count per hello   :0
STP Converge Mode    :Normal
Time since last TC   :0 days 0h:7m:25s
Number of TC         :6
Last TC occurred     :GigabitEthernet0/0/9
----[Port10(GigabitEthernet0/0/10)][DISCARDING]----
Port Protocol        :Enabled
Port Role            :Alternate Port
Port Priority         :128
Port Cost(Dot1T )    :Config=auto / Active=20000
Designated Bridge/Port :0.4c1f-cc27-4ff7 / 128.10
Port Edged           :Config=default / Active=disabled
Point-to-point       :Config=auto / Active=true
Transit Limit        :147 packets/hello-time
Protection Type      :None
Port STP Mode       :STP
Port Protocol Type   :Config=auto / Active=dot1s
BPDU Encapsulation   :Config=stp / Active=stp
PortTimes           :Hello 2s MaxAge 20s FwDly 15s RemHop 0
TC or TCN send       :0
TC or TCN received   :34
BPDU Sent            :3
                    TCN: 0, Config: 3, RST: 0, MST: 0
BPDU Received        :446
                    TCN: 0, Config: 446, RST: 0, MST: 0

```

Шаг 2. Контроль выбора корневого устройства

Вывод информации о корневом устройстве

S1	<pre> [Huawei]display stp -----[CIST Global Info][Mode MSTP]----- CIST Bridge :0 .4c1f-cc27-4ff7 Config Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 Active Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 CIST Root/ERPC :0 .4c1f-cc27-4ff7 / 0 CIST RegRoot/IRPC :0 .4c1f-cc27-4ff7 / 0 CIST RootPortId :0.0 BPDU-Protection :Disabled CIST Root Type :Primary root TC or TCN received :7 TC count per hello :0 STP Converge Mode :Normal Time since last TC :0 days 0h:14m:47s Number of TC :7 Last TC occurred :GigabitEthernet0/0/10 </pre>
S2	<pre> [Huawei]display stp -----[CIST Global Info][Mode STP]----- CIST Bridge :4096 .4c1f-cc19-515d Config Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 Active Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 CIST Root/ERPC :0 .4c1f-cc27-4ff7 / 20000 CIST RegRoot/IRPC :4096 .4c1f-cc19-515d / 0 CIST RootPortId :128.9 BPDU-Protection :Disabled CIST Root Type :Secondary root TC or TCN received :72 TC count per hello :0 STP Converge Mode :Normal Time since last TC :0 days 0h:14m:32s Number of TC :6 Last TC occurred :GigabitEthernet0/0/9 </pre>

Назначение S2 в качестве корневого и S1 в качестве резервного корневого используя приоритеты

S1	<pre> [Huawei]undo stp root [Huawei]stp priority 8192 </pre>
S2	<pre> [Huawei]undo stp root [Huawei]stp priority 4096 </pre>

Вывод информации о новом корневом устройстве

S1	<pre> [Huawei]display stp -----[CIST Global Info][Mode MSTP]----- CIST Bridge :8192 .4c1f-cc27-4ff7 Config Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 Active Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 CIST Root/ERPC :4096 .4c1f-cc19-515d / 20000 </pre>
----	--

	CIST RegRoot/IRPC :8192 .4c1f-cc27-4ff7 / 0 CIST RootPortId :128.9 BPDU-Protection :Disabled TC or TCN received :76 TC count per hello :0 STP Converge Mode :Normal Time since last TC :0 days 0h:0m:53s Number of TC :10 Last TC occurred :GigabitEthernet0/0/9
S2	<pre>[Huawei]display stp -----[CIST Global Info][Mode STP]----- CIST Bridge :4096 .4c1f-cc19-515d Config Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 Active Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 CIST Root/ERPC :4096 .4c1f-cc19-515d / 0 CIST RegRoot/IRPC :4096 .4c1f-cc19-515d / 0 CIST RootPortId :0.0 BPDU-Protection :Disabled TC or TCN received :72 TC count per hello :0 STP Converge Mode :Normal Time since last TC :0 days 0h:1m:42s Number of TC :8 Last TC occurred :GigabitEthernet0/0/10</pre>

Отключение интерфейсов GigabitEthernet 0/0/9 и GigabitEthernet 0/0/10 на S2

S2	<pre>[Huawei]interface GigabitEthernet 0/0/9 [Huawei-GigabitEthernet0/0/9]shutdown [Huawei-GigabitEthernet0/0/9]quit [Huawei]interface GigabitEthernet 0/0/10 [Huawei-GigabitEthernet0/0/10]shutdown [Huawei-GigabitEthernet0/0/10]quit</pre>
----	---

Вывод информации о новом корневом устройстве

S1	<pre>[Huawei]display stp -----[CIST Global Info][Mode MSTP]----- CIST Bridge :8192 .4c1f-cc27-4ff7 Config Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 Active Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 CIST Root/ERPC :8192 .4c1f-cc27-4ff7 / 0 CIST RegRoot/IRPC :8192 .4c1f-cc27-4ff7 / 0 CIST RootPortId :0.0 BPDU-Protection :Disabled TC or TCN received :0 TC count per hello :0 STP Converge Mode :Normal Time since last TC :0 days 0h:0m:0s</pre>
----	--

	Number of TC	:0
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Включение отключенных ранее интерфейсов

S2	<pre>[Huawei]interface GigabitEthernet 0/0/9 [Huawei-GigabitEthernet0/0/9]undo shutdown [Huawei-GigabitEthernet0/0/9]quit [Huawei]interface GigabitEthernet 0/0/10 [Huawei-GigabitEthernet0/0/10]undo shutdown [Huawei-GigabitEthernet0/0/10]quit</pre>
----	---

Вывод информации о восстановленном корневом порте

S1	<pre>[Huawei]display stp -----[CIST Global Info][Mode MSTP]----- CIST Bridge :8192 .4c1f-cc27-4ff7 Config Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 Active Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 CIST Root/ERPC :4096 .4c1f-cc19-515d / 20000 CIST RegRoot/IRPC :8192 .4c1f-cc27-4ff7 / 0 CIST RootPortId :128.9 BPDU-Protection :Disabled TC or TCN received :277 TC count per hello :0 STP Converge Mode :Normal Time since last TC :0 days 0h:13m:12s Number of TC :12 Last TC occurred :GigabitEthernet0/0/9</pre>
S2	<pre>[Huawei]display stp -----[CIST Global Info][Mode STP]----- CIST Bridge :4096 .4c1f-cc19-515d Config Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 Active Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 CIST Root/ERPC :4096 .4c1f-cc19-515d / 0 CIST RegRoot/IRPC :4096 .4c1f-cc19-515d / 0 CIST RootPortId :0.0 BPDU-Protection :Disabled TC or TCN received :0 TC count per hello :0 STP Converge Mode :Normal Time since last TC :0 days 0h:13m:10s Number of TC :9 Last TC occurred :GigabitEthernet0/0/10</pre>

Шаг 3. Контроль выбора корневого порта

Вывод краткой информации об STP

S1	[Huawei]display stp brief			
	MSTID	Port	Role	STP State
	Protection			
	0	GigabitEthernet0/0/9	ROOT	FORWARDING
	0	GigabitEthernet0/0/10	ALTE	DISCARDING

Изменение приоритетов портов на S2

S2	[Huawei]interface GigabitEthernet 0/0/9			
	[Huawei-GigabitEthernet0/0/9]stp port priority 32			
	[Huawei-GigabitEthernet0/0/9]quit			
	[Huawei]interface GigabitEthernet 0/0/10			
	[Huawei-GigabitEthernet0/0/10]stp port priority 16			
	[Huawei-GigabitEthernet0/0/10]quit			

Вывод информации об измененных приоритетах портов на S2

S2

[Huawei]display stp interface GigabitEthernet 0/0/9
-----[CIST Global Info][Mode STP]-----
CIST Bridge :4096 .4c1f-cc19-515d
Config Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20
Active Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20
CIST Root/ERPC :4096 .4c1f-cc19-515d / 0
CIST RegRoot/IRPC :4096 .4c1f-cc19-515d / 0
CIST RootPortId :0.0
BPDU-Protection :Disabled
TC or TCN received :1
TC count per hello :0
STP Converge Mode :Normal
Time since last TC :0 days 0h:2m:0s
Number of TC :10
Last TC occurred :GigabitEthernet0/0/10
----[Port9(GigabitEthernet0/0/9)][FORWARDING]----
Port Protocol :Enabled
Port Role :Designated Port
Port Priority :32
Port Cost(Dot1T) :Config=auto / Active=20000
Designated Bridge/Port :4096.4c1f-cc19-515d / 32.9
Port Edged :Config=default / Active=disabled
Point-to-point :Config=auto / Active=true
Transit Limit :147 packets/hello-time
Protection Type :None
Port STP Mode :STP
Port Protocol Type :Config=auto / Active=dot1s
BPDU Encapsulation :Config=stp / Active=stp
PortTimes :Hello 2s MaxAge 20s FwDly 15s RemHop 20
TC or TCN send :158

	<pre> TC or TCN received :0 BPDU Sent :3406 TCN: 0, Config: 3406, RST: 0, MST: 0 BPDU Received :0 TCN: 0, Config: 0, RST: 0, MST: 0 [Huawei]display stp interface GigabitEthernet 0/0/10 -----[CIST Global Info][Mode STP]----- CIST Bridge :4096 .4c1f-cc19-515d Config Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 Active Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 CIST Root/ERPC :4096 .4c1f-cc19-515d / 0 CIST RegRoot/IRPC :4096 .4c1f-cc19-515d / 0 CIST RootPortId :0.0 BPDU-Protection :Disabled TC or TCN received :1 TC count per hello :0 STP Converge Mode :Normal Time since last TC :0 days 0h:3m:29s Number of TC :10 Last TC occurred :GigabitEthernet0/0/10 ----[Port10(GigabitEthernet0/0/10)][FORWARDING]---- Port Protocol :Enabled Port Role :Designated Port Port Priority :16 Port Cost(Dot1T) :Config=auto / Active=20000 Designated Bridge/Port :4096.4c1f-cc19-515d / 16.10 Port Edged :Config=default / Active=disabled Point-to-point :Config=auto / Active=true Transit Limit :147 packets/hello-time Protection Type :None Port STP Mode :STP Port Protocol Type :Config=auto / Active=dot1s BPDU Encapsulation :Config=stp / Active=stp PortTimes :Hello 2s MaxAge 20s FwDly 15s RemHop 20 TC or TCN send :35 TC or TCN received :1 BPDU Sent :723 TCN: 0, Config: 723, RST: 0, MST: 0 BPDU Received :1 TCN: 1, Config: 0, RST: 0, MST: 0 </pre>
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Вывод измененных ролей интерфейсов на S1

S1	<pre> [Huawei]display stp brief MSTID Port Role STP State Protection </pre>
----	---

	0 GigabitEthernet0/0/9	ALTE	DISCARDING	NONE
	0 GigabitEthernet0/0/10	ROOT	FORWARDING	NONE

Отключение G0/0/10 на S1

S1	<pre>[Huawei]interface GigabitEthernet 0/0/10 [Huawei-GigabitEthernet0/0/10]shutdown [Huawei-GigabitEthernet0/0/10]quit</pre>			
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Вывод краткой информации с S1 после отключения G0/0/10

S1	<pre>[Huawei]display stp brief MSTID Port Role STP State Protection 0 GigabitEthernet0/0/9 ROOT FORWARDING NONE</pre>			
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Восстановление отключенного порта на S1 и приоритетов по умолчанию на портах S2

S1	<pre>[Huawei]interface GigabitEthernet 0/0/10 [Huawei-GigabitEthernet0/0/10]undo shutdown [Huawei-GigabitEthernet0/0/10]quit</pre>			
S2	<pre>[Huawei]interface GigabitEthernet 0/0/9 [Huawei-GigabitEthernet0/0/9]undo stp port priority [Huawei-GigabitEthernet0/0/9]quit [Huawei]interface GigabitEthernet 0/0/10 [Huawei-GigabitEthernet0/0/10]undo stp port priority [Huawei-GigabitEthernet0/0/10]quit</pre>			

Вывод диагностических команд после восстановления отключенного порта на S1 и восстановления приоритетов по умолчанию на портах S2

S1	<pre>[Huawei]display stp brief MSTID Port Role STP State Protection 0 GigabitEthernet0/0/9 ROOT FORWARDING NONE 0 GigabitEthernet0/0/10 ALTE DISCARDING NONE [Huawei]display stp interface GigabitEthernet 0/0/9 -----[CIST Global Info][Mode MSTP]----- CIST Bridge :8192 .4c1f-cc27-4ff7 Config Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 Active Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20</pre>			
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	CIST Root/ERPC :4096 .4c1f-cc19-515d / 20000 CIST RegRoot/IRPC :8192 .4c1f-cc27-4ff7 / 0 CIST RootPortId :128.9 BPDU-Protection :Disabled TC or TCN received :469 TC count per hello :0 STP Converge Mode :Normal Time since last TC :0 days 0h:7m:10s Number of TC :24 Last TC occurred :GigabitEthernet0/0/9 ----[Port9 (GigabitEthernet0/0/9)] [FORWARDING]---- Port Protocol :Enabled Port Role :Root Port Port Priority :128 Port Cost(Dot1T) :Config=auto / Active=20000 Designated Bridge/Port :4096.4c1f-cc19-515d / 128.9 Port Edged :Config=default / Active=disabled Point-to-point :Config=auto / Active=true Transit Limit :147 packets/hello-time Protection Type :None Port STP Mode :STP Port Protocol Type :Config=auto / Active=dot1s BPDU Encapsulation :Config=stp / Active=stp PortTimes :Hello 2s MaxAge 20s FwdDly 15s RemHop 0 TC or TCN send :4 TC or TCN received :247 BPDU Sent :5 TCN: 2, Config: 0, RST: 0, MST: 3 BPDU Received :4458 TCN: 0, Config: 4458, RST: 0, MST: 0
--	--

Установим стоимость порта G 0/0/9

S1	[Huawei]interface GigabitEthernet 0/0/9 [Huawei-GigabitEthernet0/0/9]stp cost 200000
----	---

Вывод диагностических команд после изменения стоимости G 0/0/9

S1	[Huawei]display stp brief <pre> MSTID Port Role STP State Protection 0 GigabitEthernet0/0/9 ALTE DISCARDING NONE 0 GigabitEthernet0/0/10 ROOT FORWARDING NONE </pre> [Huawei]display stp interface GigabitEthernet 0/0/9 -----[CIST Global Info][Mode MSTP]----- CIST Bridge :8192 .4c1f-cc27-4ff7
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Config Times           :Hello 2s MaxAge 20s FwDly 15s MaxHop 20
Active Times          :Hello 2s MaxAge 20s FwDly 15s MaxHop 20
CIST Root/ERPC        :4096 .4c1f-cc19-515d / 20000
CIST RegRoot/IRPC     :8192 .4c1f-cc27-4ff7 / 0
CIST RootPortId       :128.10
BPDU-Protection        :Disabled
TC or TCN received    :505
TC count per hello    :0
STP Converge Mode     :Normal
Time since last TC    :0 days 0h:4m:5s
Number of TC          :26
Last TC occurred      :GigabitEthernet0/0/10
----[Port9(GigabitEthernet0/0/9)][DISCARDING]----
Port Protocol         :Enabled
Port Role             :Alternate Port
Port Priority          :128
Port Cost(Dot1T )    :Config=200000 / Active=200000
Designated Bridge/Port :4096.4c1f-cc19-515d / 128.9
Port Edged            :Config=default / Active=disabled
Point-to-point        :Config=auto / Active=true
Transit Limit         :147 packets/hello-time
Protection Type       :None
Port STP Mode         :STP
Port Protocol Type    :Config=auto / Active=dot1s
BPDU Encapsulation    :Config=stp / Active=stp
PortTimes             :Hello 2s MaxAge 20s FwDly 15s RemHop 0
TC or TCN send        :4
TC or TCN received    :264
BPDU Sent             :5
                        TCN: 2, Config: 0, RST: 0, MST: 3
BPDU Received         :5098
                        TCN: 0, Config: 5098, RST: 0, MST: 0

```

Часть 2. Конфигурирование RSTP

Изображение реализованной топологии



Шаг 1. Настройка RSTP и проверка конфигурации RSTP

Установим режим RSTP:

S1	<pre>sys sys S1 stp mode rstp</pre>
S2	<pre>sys sys S2 stp mode rstp</pre>

Убедимся, что установлен режим RSTP:

S1	<pre>[S1]display stp -----[CIST Global Info][Mode RSTP]----- CIST Bridge :32768.4c1f-ccc9-1bf0 Config Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 Active Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 CIST Root/ERPC :32768.4c1f-ccc9-1bf0 / 0 CIST RegRoot/IRPC :32768.4c1f-ccc9-1bf0 / 0 CIST RootPortId :0.0 BPDU-Protection :Disabled ...</pre>
S2	<pre>[S2]display stp -----[CIST Global Info][Mode RSTP]----- CIST Bridge :32768.4c1f-cce3-6a82 Config Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 Active Times :Hello 2s MaxAge 20s FwDly 15s MaxHop 20 CIST Root/ERPC :32768.4c1f-ccc9-1bf0 / 20000 CIST RegRoot/IRPC :32768.4c1f-cce3-6a82 / 0 CIST RootPortId :128.9 BPDU-Protection :Disabled ...</pre>

Шаг 2. Конфигурирование граничного порта

Переводим граничные порты в состояние пересылки без участия в расчёте RSTP:

S1	[S1]interface GigabitEthernet 0/0/1 [S1-GigabitEthernet0/0/1]undo shutdown Info: Interface GigabitEthernet0/0/1 is not shutdown. [S1-GigabitEthernet0/0/1]stp edged-port enable
S2	[S2]interface GigabitEthernet 0/0/1 [S2-GigabitEthernet0/0/1]undo shutdown Info: Interface GigabitEthernet0/0/1 is not shutdown. [S2-GigabitEthernet0/0/1]stp edged-port enable

Шаг 3. Конфигурирование защиты BPDU

Включаем защиту BPDU:

S1	stp bpdu-protection
S2	stp bpdu-protection

Убедимся, что защита BPDU установлена:

S1	[S1]display stp brief MSTID Port Role STP State Protection 0 GigabitEthernet0/0/1 DESI FORWARDING BPDU 0 GigabitEthernet0/0/9 DESI FORWARDING NONE 0 GigabitEthernet0/0/10 DESI FORWARDING NONE
S2	[S2]display stp brief MSTID Port Role STP State Protection 0 GigabitEthernet0/0/1 DESI FORWARDING BPDU 0 GigabitEthernet0/0/9 ROOT FORWARDING NONE 0 GigabitEthernet0/0/10 ALTE DISCARDING NONE

Шаг 4. Конфигурирование защиты от петель

Настроим защиту от петель:

S2	<pre>[S2]interface G0/0/9 [S2-GigabitEthernet0/0/9]stp loop-protection [S2-GigabitEthernet0/0/9]q [S2]interface G0/0/10 [S2-GigabitEthernet0/0/10]stp loop-protection</pre>
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Убедимся, что защита настроена:

S2	[S2]disp stp brief				
	MSTID	Port		Role	STP State
	Protection				
	0	GigabitEthernet0/0/1	DESI	FORWARDING	BPDU
	0	GigabitEthernet0/0/9	ROOT	FORWARDING	LOOP
	0	GigabitEthernet0/0/10	ALTE	DISCARDING	LOOP