ULTRA HD IP

Just Add Power

CISCO SG550X

WHITEPAPER

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Stacking vs. Trunking

Cisco SG550X switches have some advantages over Cisco SG350 switches: Cisco SG550X switches support stacking and have 10Gbps ports. According to the Cisco SG550X data sheet, up to **8 units** and can be managed in a single stacked system. For other differences between the Cisco SG350 and SG550X, please see Cisco's website: www.cisco.com.

Stacking

When 2 or more switches are stacked together they act as if they are 1 physical switch. One switch is designated as the "Master" and is used as the configuration point for all of the switches in the stack. All information meant for any of the stacked switches is passed to all switches in the stack, regardless of the final destination of the information.

Control systems attempting to communicate with stacked switches need only one connection point: either serial connection to the Master switch in the stack, or a telnet connection through any port on the switch.

Stacking can be done over CatX cable or over SFP modules. Stack bandwidth is 10 Gbps as long as the cable supports it.

The benefit of stacking is realized when there are more Just Add Power devices than ports on a single switch. Stacking cables are able to handle much more bandwidth than Cat5e/6 cables.

Both JADConfig and Multicast setups can use Stacking.

Trunking

When 2 or more switches are trunked together they act as separate switches. This means that they have separate MAC addresses, IP addresses, VLANs, MAC-Address Tables, etc. They are able to forward VLAN information from one switch to another while also keeping information for those VLANs separated.

Control systems communicating with trunked switches will need one connection for **EACH** switch in a trunk, as each switch behaves as a completely separate entity and cannot directly influence the configuration of another switch.

Trunking can be done over CatX cable or over SFP modules. Trunk bandwidth can be 1 Gbps or 10 Gbps.

Multicast setups can use Trunking.

Stack Setup

The SG550X allows for up to 8 switches to be stacked together. With eight 48-port switches, this leaves open the possibility for almost 400 connected devices in a single stack.

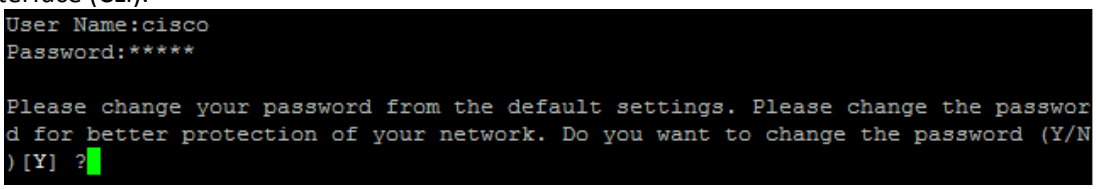
Before Connecting Stacking Cables

Perform the steps below for each switch in the stack before connecting them together with the stacking cables:

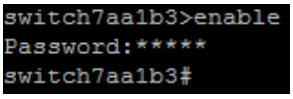
1. Connect to the switch with the included console cable and create a serial connection to the switch at a baud rate of `115200-8n1`.

2. Power on the switch and allow it to run through the boot sequence. When it finishes, the prompt will ask for a username and password. Both are `cisco`.

3. When it asks to change the password, type N. This will exit from the initial set-up dialog and go to the command line interface (CLI).

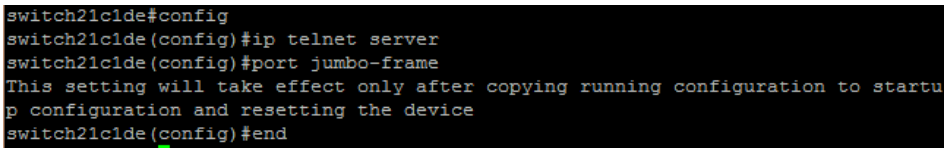


NOTE: All of the CLI commands below must be typed starting at the `switch#` prompt. Sending `end` as the last command returns to that prompt. If the switch gets into the `switch>` prompt, send `enable` and enter the switch password to return to the `switch#` prompt.



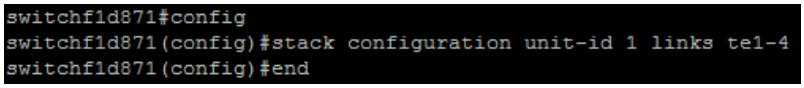
4. Enable telnet and Jumbo Frames.

```
config
ip telnet server
port jumbo-frame
end
```



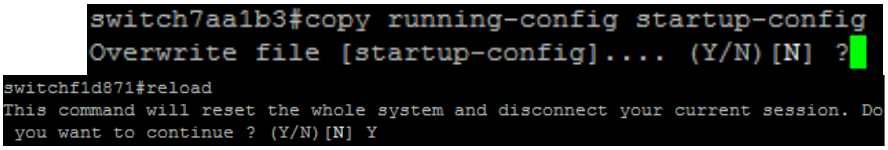
5. Assign switch unit-id (**SID**) and assign SFP ports as stack ports. **SID1** will be the Master.

```
config
stack configuration unit-id 1 links te1-4
end
```



6. Save the configuration and reboot the switch

```
copy running-config startup-config
y
reload
y
```



7. Move the console cable to the next switch and repeat steps 1-6 for each SID up to 8, making sure not to duplicate SIDs.

8. Connect stacking cables between the switches once all switches have had their SID assigned and have rebooted.

After Connecting Stacking Cables

Once SIDs have been assigned to all switches, connect the stacking cables between the switches.

Perform the steps below to confirm that the SIDs are assigned to the correct switch

1. Connect to the Master Switch – the switch with SID 1 – with the included console cable and create a serial connection to the switch at a baud rate of `115200-8n1`. The Master switch will yield a `switch#` prompt. All other SIDs will yield a > prompt.
2. Show the stack configuration of the switch to confirm that devices are assigned SIDs as expected.

show stack

```
switchf1d871#show stack

Topology is Chain
Units stack mode: Native

Unit Id     MAC Address       Role    Network Uplink
                                      Port    Port
                                      Type    Type
------- ----------------- -------- ------- ------
   1     40:a6:e8:f1:d8:71   master    gi      te
   2     40:a6:e8:f2:81:2d   backup    gi      te
```

3. If SIDs are not assigned as expected:
    a. Re-assign SIDs to the correct value. **X** = current SID, **Y** = new SID

```
config
stack unit X
stack configuration unit-id Y
end
```

```
switchf1d871#config
switchf1d871(config)#stack unit 1
switchf1d871(unit)#stack configuration unit-id 2
switchf1d871(unit)#stack unit 2
switchf1d871(unit)#stack configuration unit-id 1
switchf1d871(unit)#end
```

    b. Confirm that the stack re-assignments were done correctly.

```
show stack config
```

```
switchf1d871#show stack config

Unit Id  After Reboot Configuration
         Unit Id   Stack Links
-------- ------- ---------------
1        2       te1-4
2        1       te1-4
```

    c. Reboot the stack once all SIDs have been re-assigned. Keep in mind that the console cable must be connected to SID1 once the stack reboots.

```
reload
y
```

```
switchf1d871#reload
This command will reset the whole system and disconnect your current session. Do
 you want to continue ? (Y/N)[N] Y
```

4. Once SIDs are assigned as expected, stack configuration is complete!

JADConfig Setup

Concept

JADConfig setup uses a managed switch and the nature of VLANs to isolate video signals from each other and from the data network. Ports are set into General Mode to accommodate IP communication to all devices at all times regardless of their VLAN membership. To switch sources, port-VLAN membership is changed within the switch.
JADConfig setup provides basic matrix switching plus endpoint control of Just Add Power devices (video wall, CEC, RS232, IR, USB, OSD, etc.) This method **requires** an IP connection from the control system to the switch.

Attributes

A JADConfig-compatible setup has these benefits & features:

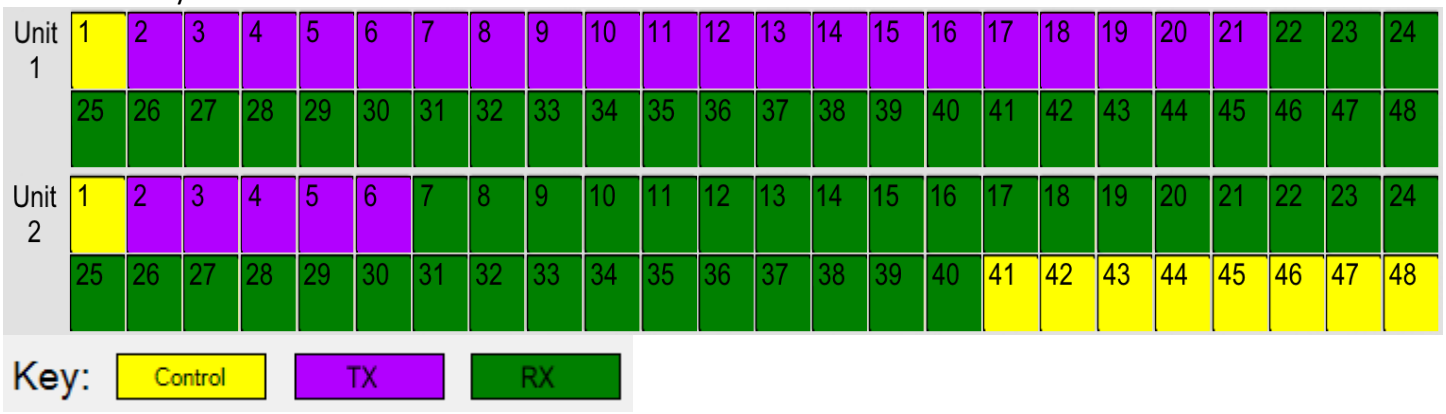
- Instant-seamless switching
- HDMI matrix switching
- Endpoint control via RS232, IR, or CEC
- Video Wall
- USB
- On-Screen Display
- Image Pull
- Tiling Transmitter layout control
- Video traffic separated from data network traffic
- Just Add Power devices do not need to be configured for HDMI matrix switching
- No practical source or display limitations

A JADConfig-compatible setup has these drawbacks:

- Requires a managed Ethernet switch
- Switching involves reconfiguring the managed Ethernet switch
- Switching commands are switch-specific

Switch Setup

The example set-up will include two 48-port switches already stacked. There are 25 Transmitters: 20 Transmitters on switch unit-id 1 (SID1) and 5 Transmitters on SID2. There are 61 Receivers: 27 Receivers on SID1 and 34 Receivers on SID2. Port 1 on each SID is reserved as a data network port, as well as the last 8 unused ports on SID2. It is recommended that port 1 on SID1 be used to connect to the rest of the network. The remaining data network ports may be used for any data network device.



NOTE: The stack/port notation for the switches is in the format `giSID/0/port`. It is important that the SIDs are assigned properly.

1. Connect to the Master Switch – the switch with SID 1 – with the included console cable and create a serial connection to the switch at a baud rate of `115200-8n1`. The Master switch will yield a `switch#` prompt. All other SIDs will yield a > prompt.

2. Power on the switch and allow it to run through the boot sequence. When it finishes, the prompt will ask for a username and password. Both are `cisco`.

3. Disable auto-configuration on all ports (1/0/1-48 and 2/0/1-48). This is a "feature" of the Cisco SG550X that reconfigures ports automatically based on the connected devices.

```
config
interface range gi1/0/1-48,gi2/0/1-48
y
no macro auto smartport
end
```

```
switchf1d871#config
switchf1d871(config)#interface range gi1/0/1-48,gi2/0/1-48
Configuring all ports may consume an excessive amount of time. Define only the r
equired ports to save time.
Do you wish to continue? (Y/N)[N] Y
switchf1d871(config-if-range)#no macro auto smartport
switchf1d871(config-if-range)#end
```

4. Turn on *spanning-tree portfast* for all Just Add Power ports. This enables instant-seamless switching.

```
config
interface range gi1/0/2-48,gi2/0/2-40
y
spanning-tree portfast
end
```

```
switchf1d871#con
switchf1d871(config)#int r gi1/0/2-48,gi2/0/2-40
Configuring all ports may consume an excessive amount of time. Define only the r
equired ports to save time.
Do you wish to continue? (Y/N)[N] Y
switchf1d871(config-if-range)#spanning-tree portfast
switchf1d871(config-if-range)#end
```

5. Set the IP of the control VLAN (1). For this example, we will set the IP address for 192.168.1.200 and subnet mask for 255.255.255.0.

```
config
interface vlan 1
ip address 192.168.1.200 255.255.255.0
end
```

```
switch7aa1b3#config
switch7aa1b3(config)#interface vlan 1
switch7aa1b3(config-if)#ip address 192.168.1.200 255.255.255.0
switch7aa1b3(config-if)#end
```

6. Set the default gateway of the switch. For this example, the router IP is 192.168.1.1.

```
config
ip default-gateway 192.168.1.1
end
```

```
switch7aa1b3#config
switch7aa1b3(config)#ip default-gateway 192.168.1.1
switch7aa1b3(config)#end
```

7. Create VLANs for Transmitters and Receivers. One VLAN is needed to hold all devices, and one VLAN is needed **per** Transmitter. There are 25 Transmitters in this system.

```
config
vlan database
vlan 10-35
end
```

```
switchf1d871#config
switchf1d871(config)#vlan database
switchf1d871(config-vlan)#vlan 10-35
switchf1d871(config-vlan)#end
```

NOTE: JADConfig uses VLAN 10 for all devices and VLANs 11 and up for Transmitters. In a customized system, any VLAN number can be used.

8. Put the Receiver ports in general mode and assign VLANs. Receiver ports have membership in VLAN 10 and the VLAN of the Transmitter they are watching, with the Primary VLAN ID (PVID) being the VLAN for all devices (VLAN 10). In this example, Receiver ports are set to watch the VLAN 11 Transmitter.

```
config
interface range gi1/0/22-48,gi2/0/7-40
y
switchport mode general
switchport general allowed vlan add 10,11 untag
switchport general pvid 10
end
```

```
switchf1d871#config
switchf1d871(config)#int range gi1/0/22-48,gi2/0/7-40
Configuring all ports may consume an excessive amount of time. Define only the r
equired ports to save time.
Do you wish to continue? (Y/N)[N] Y
switchf1d871(config-if-range)#switchport mode general
switchf1d871(config-if-range)#switchport general allowed vlan add 10,11 untag
switchf1d871(config-if-range)#switchport general pvid 10
switchf1d871(config-if-range)#end
```

9. Put the Transmitter ports in general mode and assign each port a unique VLAN. Transmitter ports have membership in VLAN 10 and their unique VLAN, with the Primary VLAN ID (PVID) being their unique VLAN.

```
config
interface range gi1/0/2-21,gi2/0/2-6
switchport mode general
interface gi1/0/2
switchport general allowed vlan add 10,11 untag
switchport general pvid 11
interface gi1/0/3
switchport general allowed vlan add 10,12 untag
switchport general pvid 12
interface gi1/0/4
switchport general allowed vlan add 10,13 untag
switchport general pvid 13
interface gi1/0/5
switchport general allowed vlan add 10,14 untag
switchport general pvid 14
interface gi1/0/6
switchport general allowed vlan add 10,15 untag
switchport general pvid 15
interface gi1/0/7
switchport general allowed vlan add 10,16 untag
switchport general pvid 16
interface gi1/0/8
switchport general allowed vlan add 10,17 untag
switchport general pvid 17
interface gi1/0/9
switchport general allowed vlan add 10,18 untag
switchport general pvid 18
interface gi1/0/10
switchport general allowed vlan add 10,19 untag
switchport general pvid 19
interface gi1/0/11
```

```
switchf1d871#config
switchf1d871(config)#interface range gi1/0/2-21,gi2/0/2-6
switchf1d871(config-if-range)#switchport mode general
switchf1d871(config-if-range)#interface gi1/0/2
switchf1d871(config-if)#switchport general allowed vlan add 10,11 untag
switchf1d871(config-if)#switchport general pvid 11
switchf1d871(config-if)#interface gi1/0/3
switchf1d871(config-if)#switchport general allowed vlan add 10,12 untag
switchf1d871(config-if)#switchport general pvid 12
switchf1d871(config-if)#interface gi1/0/4
switchf1d871(config-if)#switchport general allowed vlan add 10,13 untag
switchf1d871(config-if)#switchport general pvid 13
switchf1d871(config-if)#interface gi1/0/5
switchf1d871(config-if)#switchport general allowed vlan add 10,14 untag
switchf1d871(config-if)#switchport general pvid 14
switchf1d871(config-if)#interface gi1/0/6
switchf1d871(config-if)#switchport general allowed vlan add 10,15 untag
switchf1d871(config-if)#switchport general pvid 15
switchf1d871(config-if)#interface gi1/0/7
switchf1d871(config-if)#switchport general allowed vlan add 10,16 untag
switchf1d871(config-if)#switchport general pvid 16
switchf1d871(config-if)#interface gi1/0/8
switchf1d871(config-if)#switchport general allowed vlan add 10,17 untag
switchf1d871(config-if)#switchport general pvid 17
switchf1d871(config-if)#interface gi1/0/9
switchf1d871(config-if)#switchport general allowed vlan add 10,18 untag
switchf1d871(config-if)#switchport general pvid 18
switchf1d871(config-if)#interface gi1/0/10
switchf1d871(config-if)#switchport general allowed vlan add 10,19 untag
switchf1d871(config-if)#switchport general pvid 19
switchf1d871(config-if)#interface gi1/0/11
```

```
switchport general allowed vlan add 10,20 untag
switchport general pvid 20
interface gi1/0/12
switchport general allowed vlan add 10,21 untag
switchport general pvid 21
interface gi1/0/13
switchport general allowed vlan add 10,22 untag
switchport general pvid 22
interface gi1/0/14
switchport general allowed vlan add 10,23 untag
switchport general pvid 23
interface gi1/0/15
switchport general allowed vlan add 10,24 untag
switchport general pvid 24
interface gi1/0/16
switchport general allowed vlan add 10,25 untag
switchport general pvid 25
interface gi1/0/17
switchport general allowed vlan add 10,26 untag
switchport general pvid 26
interface gi1/0/18
switchport general allowed vlan add 10,27 untag
switchport general pvid 27
interface gi1/0/19
switchport general allowed vlan add 10,28 untag
switchport general pvid 28
interface gi1/0/20
switchport general allowed vlan add 10,29 untag
switchport general pvid 29
interface gi1/0/21
switchport general allowed vlan add 10,30 untag
switchport general pvid 30
interface gi2/0/2
switchport general allowed vlan add 10,31 untag
switchport general pvid 31
interface gi2/0/3
switchport general allowed vlan add 10,32 untag
switchport general pvid 32
interface gi2/0/4
switchport general allowed vlan add 10,33 untag
switchport general pvid 33
interface gi2/0/5
switchport general allowed vlan add 10,34 untag
switchport general pvid 34
interface gi2/0/6
switchport general allowed vlan add 10,35 untag
switchport general pvid 35
end
```

```
switchf1d871(config-if)#switchport general allowed vlan add 10,20 untag
switchf1d871(config-if)#switchport general pvid 20
switchf1d871(config-if)#interface gi1/0/12
switchf1d871(config-if)#switchport general allowed vlan add 10,21 untag
switchf1d871(config-if)#switchport general pvid 21
switchf1d871(config-if)#interface gi1/0/13
switchf1d871(config-if)#switchport general allowed vlan add 10,22 untag
switchf1d871(config-if)#switchport general pvid 22
switchf1d871(config-if)#interface gi1/0/14
switchf1d871(config-if)#switchport general allowed vlan add 10,23 untag
switchf1d871(config-if)#switchport general pvid 23
switchf1d871(config-if)#interface gi1/0/15
switchf1d871(config-if)#switchport general allowed vlan add 10,24 untag
switchf1d871(config-if)#switchport general pvid 24
switchf1d871(config-if)#interface gi1/0/16
switchf1d871(config-if)#switchport general allowed vlan add 10,25 untag
switchf1d871(config-if)#switchport general pvid 25
switchf1d871(config-if)#interface gi1/0/17
switchf1d871(config-if)#switchport general allowed vlan add 10,26 untag
switchf1d871(config-if)#switchport general pvid 26
switchf1d871(config-if)#interface gi1/0/18
switchf1d871(config-if)#switchport general allowed vlan add 10,27 untag
switchf1d871(config-if)#switchport general pvid 27
switchf1d871(config-if)#interface gi1/0/19
switchf1d871(config-if)#switchport general allowed vlan add 10,28 untag
switchf1d871(config-if)#switchport general pvid 28
switchf1d871(config-if)#interface gi1/0/20
switchf1d871(config-if)#switchport general allowed vlan add 10,29 untag
switchf1d871(config-if)#switchport general pvid 29
switchf1d871(config-if)#interface gi1/0/21
switchf1d871(config-if)#switchport general allowed vlan add 10,30 untag
switchf1d871(config-if)#switchport general pvid 30
switchf1d871(config-if)#interface gi2/0/2
switchf1d871(config-if)#switchport general allowed vlan add 10,31 untag
switchf1d871(config-if)#switchport general pvid 31
switchf1d871(config-if)#interface gi2/0/3
switchf1d871(config-if)#switchport general allowed vlan add 10,32 untag
switchf1d871(config-if)#switchport general pvid 32
switchf1d871(config-if)#interface gi2/0/4
switchf1d871(config-if)#switchport general allowed vlan add 10,33 untag
switchf1d871(config-if)#switchport general pvid 33
switchf1d871(config-if)#interface gi2/0/5
switchf1d871(config-if)#switchport general allowed vlan add 10,34 untag
switchf1d871(config-if)#switchport general pvid 34
switchf1d871(config-if)#interface gi2/0/6
switchf1d871(config-if)#switchport general allowed vlan add 10,35 untag
switchf1d871(config-if)#switchport general pvid 35
switchf1d871(config-if)#end
```

10. **Optional:** Set the console and telnet session to stay open indefinitely.

```
config
line console
exec-timeout 0
line telnet
exec-timeout 0
end
```

```
switch7aa1b3#config
switch7aa1b3(config)#line console
switch7aa1b3(config-line)#exec-timeout 0
switch7aa1b3(config-line)#line telnet
switch7aa1b3(config-line)#exec-timeout 0
switch7aa1b3(config-line)#end
```

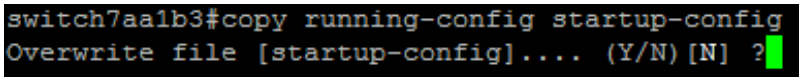
11. **Optional:** Turn off username and password checking when logging into the switch. This is useful for custom-written control system drivers if navigating the username/password prompts cause issues.

```
config
aaa authentication enable default none
aaa authentication login default none
end
```

```
switch7aa1b3#config
switch7aa1b3(config)#aaa authentication enable default none
switch7aa1b3(config)#aaa authentication login default none
switch7aa1b3(config)#end
```

12. Save the current configuration.

```
copy running-config startup-config
y
```



DANGER: Do NOT change the file name when saving. The only file the switch looks for is `startup-config`.

Congratulations! The SG550X switch is configured to work with Just Add Power Transmitters and Receivers. Matrix switching will work immediately.

HDMI Matrix Switching Commands

To switch sources, the control system will access the Cisco SG350 CLI via telnet or console.

A Receiver is always watching the Transmitter that it shares a VLAN with. There cannot be two Transmitters in the same VLAN, so changing the VLAN membership of the Receiver port changes the source the Receiver is watching.

Example: The Receiver on **`stack X`**, **`port Y`** needs to watch the Transmitter in **`VLAN Z`**. The CLI commands are:

```
enable
config
interface giX/0/Y
switchport general allowed vlan remove 11-410
switchport general allowed vlan add Z untag
end
```

(Each line ends in a carriage return)

NOTE: "`remove 11-410`" assumes that the Just Add Power Transmitter VLANs are between 11-410 and will work for any installation with fewer than 400 Transmitters. If there are more Transmitters, the remove value needs to include all Just Add Power Transmitter VLANs.

Example Running Configuration

Once the switch is configured, view the full details with the command:

```
show running-config
```

The resulting output (after hitting the Space Bar a couple of times) will look like what is shown below if all instructions are followed for a 3-source, 5-display switch configuration.

```
switchf1d871#show running-config
config-file-header
switchf1d871
v2.3.5.63 / RLINUX_923_093
CLI v1.0
file SSD indicator encrypted
@
ssd-control-start
ssd config
ssd file passphrase control unrestricted
no ssd file integrity control
ssd-control-end cb0a3fdb1f3a1af4e4430033719968c0
!
!
unit-type-control-start
unit-type unit 1 network gi uplink te
unit-type unit 2 network gi uplink te
unit-type unit 3 network gi uplink te
unit-type unit 4 network gi uplink te
unit-type unit 5 network gi uplink te
unit-type unit 6 network gi uplink te
unit-type unit 7 network gi uplink te
unit-type unit 8 network gi uplink te
unit-type-control-end
!
port jumbo-frame
vlan database
vlan 10-35
exit
voice vlan oui-table add 0001e3 Siemens_AG_phone________
voice vlan oui-table add 00036b Cisco_phone______________
voice vlan oui-table add 00096e Avaya___________________
voice vlan oui-table add 000fe2 H3C_Aolynk_______________
voice vlan oui-table add 0060b9 Philips_and_NEC_AG_phone
voice vlan oui-table add 00d01e Pingtel_phone____________
voice vlan oui-table add 00e075 Polycom/Veritel_phone___
voice vlan oui-table add 00e0bb 3Com_phone_______________
bonjour interface range vlan 1
hostname switchf1d871
line console
exec-timeout 0
exit
line telnet
exec-timeout 0
exit
ip telnet server
!
interface vlan 1
 ip address 192.168.1.200 255.255.255.0
 no ip address dhcp
!
interface GigabitEthernet1/0/1
 no macro auto smartport
!
interface GigabitEthernet1/0/2
 spanning-tree portfast
 switchport mode general
```

```
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 11
 no macro auto smartport
!
interface GigabitEthernet1/0/3
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,12 untagged
 switchport general pvid 12
 no macro auto smartport
!
interface GigabitEthernet1/0/4
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,13 untagged
 switchport general pvid 13
 no macro auto smartport
!
interface GigabitEthernet1/0/5
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,14 untagged
 switchport general pvid 14
 no macro auto smartport
!
interface GigabitEthernet1/0/6
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,15 untagged
 switchport general pvid 15
 no macro auto smartport
!
interface GigabitEthernet1/0/7
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,16 untagged
 switchport general pvid 16
 no macro auto smartport
!
interface GigabitEthernet1/0/8
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,17 untagged
 switchport general pvid 17
 no macro auto smartport
!
interface GigabitEthernet1/0/9
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,18 untagged
 switchport general pvid 18
 no macro auto smartport
!
interface GigabitEthernet1/0/10
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,19 untagged
 switchport general pvid 19
 no macro auto smartport
!
interface GigabitEthernet1/0/11
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,20 untagged
 switchport general pvid 20
 no macro auto smartport
!
interface GigabitEthernet1/0/12
 spanning-tree portfast
 switchport mode general
```

```
 switchport general allowed vlan add 10,21 untagged
 switchport general pvid 21
 no macro auto smartport
!
interface GigabitEthernet1/0/13
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,22 untagged
 switchport general pvid 22
 no macro auto smartport
!
interface GigabitEthernet1/0/14
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,23 untagged
 switchport general pvid 23
 no macro auto smartport
!
interface GigabitEthernet1/0/15
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,24 untagged
 switchport general pvid 24
 no macro auto smartport
!
interface GigabitEthernet1/0/16
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,25 untagged
 switchport general pvid 25
 no macro auto smartport
!
interface GigabitEthernet1/0/17
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,26 untagged
 switchport general pvid 26
 no macro auto smartport
!
interface GigabitEthernet1/0/18
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,27 untagged
 switchport general pvid 27
 no macro auto smartport
!
interface GigabitEthernet1/0/19
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,28 untagged
 switchport general pvid 28
 no macro auto smartport
!
interface GigabitEthernet1/0/20
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,29 untagged
 switchport general pvid 29
 no macro auto smartport
!
interface GigabitEthernet1/0/21
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,30 untagged
 switchport general pvid 30
 no macro auto smartport
!
interface GigabitEthernet1/0/22
 spanning-tree portfast
```

```
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/23
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/24
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/25
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/26
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/27
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/28
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/29
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/30
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/31
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/32
 spanning-tree portfast
```

```
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/33
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/34
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/35
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/36
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/37
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/38
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/39
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/40
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/41
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/42
```

```
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/43
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/44
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/45
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/46
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/47
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet1/0/48
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/1
 no macro auto smartport
!
interface GigabitEthernet2/0/2
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,31 untagged
 switchport general pvid 31
 no macro auto smartport
!
interface GigabitEthernet2/0/3
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,32 untagged
 switchport general pvid 32
 no macro auto smartport
!
interface GigabitEthernet2/0/4
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,33 untagged
 switchport general pvid 33
```

```
 no macro auto smartport
!
interface GigabitEthernet2/0/5
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,34 untagged
 switchport general pvid 34
 no macro auto smartport
!
interface GigabitEthernet2/0/6
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10,35 untagged
 switchport general pvid 35
 no macro auto smartport
!
interface GigabitEthernet2/0/7
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/8
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/9
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/10
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/11
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/12
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/13
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/14
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
```

```
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/15
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/16
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/17
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/18
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/19
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/20
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/21
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/22
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/23
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/24
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
```

```
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/25
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/26
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/27
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/28
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/29
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/30
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/31
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/32
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/33
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/34
 spanning-tree portfast
 switchport mode general
```

```
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/35
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/36
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/37
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/38
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/39
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/40
 spanning-tree portfast
 switchport mode general
 switchport general allowed vlan add 10-11 untagged
 switchport general pvid 10
 no macro auto smartport
!
interface GigabitEthernet2/0/41
 no macro auto smartport
!
interface GigabitEthernet2/0/42
 no macro auto smartport
!
interface GigabitEthernet2/0/43
 no macro auto smartport
!
interface GigabitEthernet2/0/44
 no macro auto smartport
!
interface GigabitEthernet2/0/45
 no macro auto smartport
!
interface GigabitEthernet2/0/46
 no macro auto smartport
!
interface GigabitEthernet2/0/47
 no macro auto smartport
!
interface GigabitEthernet2/0/48
 no macro auto smartport
!
```

```
exit
ip default-gateway 192.168.1.1
```

Multicast Switching Setup

Concept

Multicast Switching is only available on 3G devices on **Firmware A7.x** and later

Multicast switching uses an unmanaged switch – or a managed switch in which all Just Add Power devices are part of the same VLAN – and the nature of multicast subscriptions to direct video and audio to specific devices. Each Transmitter is assigned a unique Multicast IP. To switch sources, the Receiver's Multicast IP is set to the Multicast IP of the Transmitter it will view.
Multicast switching setup provides basic matrix switching plus endpoint control of Just Add Power devices (video wall, CEC, RS232, IR, USB, OSD, etc.) This method **requires** an IP connection from the control system to the switch.

Attributes

Multicast switching setup has these benefits & features:

- HDMI matrix switching
- Endpoint control via RS232, IR, or CEC
- Video Wall
- USB
- On-Screen Display
- Image Pull
- Tiling Transmitter layout control
- Switch configuration never changes
- Managed Ethernet switch not needed if isolated

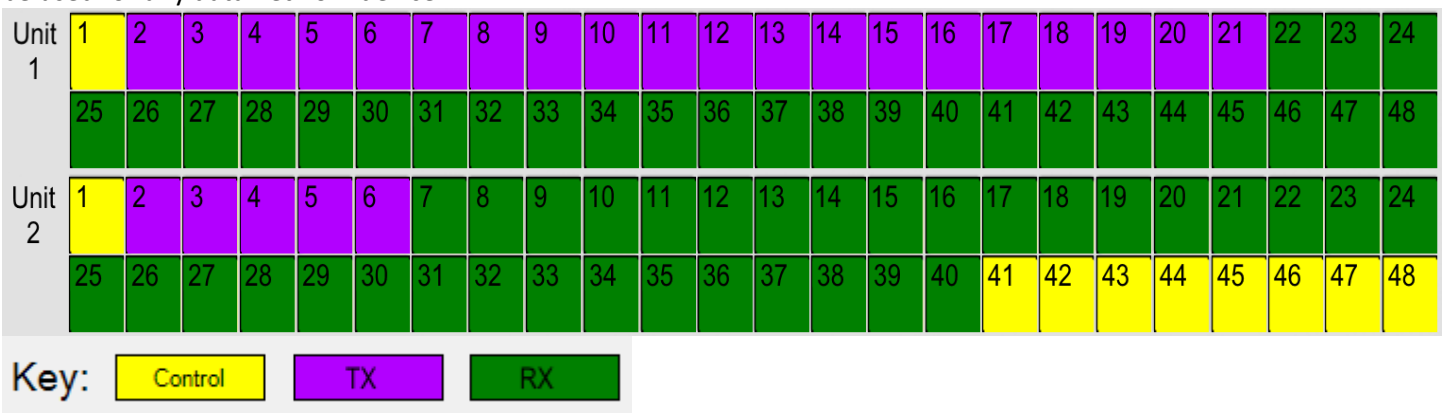
Multicast switching setup has these drawbacks:

- Loss of instant-seamless switching; fast but not instant
- All Just Add Power devices must be configured with static IPs
- Cannot share data traffic and video traffic on same switch without some switch configuration

Switch Setup

If the switch will have only Just Add Power devices and the control system attached, no switch setup is necessary aside from enabling jumbo frames. Jumbo frames are enabled during the stack configuration process.

The example set-up will include two 48-port switches already stacked. There are 25 Transmitters: 20 Transmitters on switch unit-id 1 (SID1) and 5 Transmitters on SID2. There are 61 Receivers: 27 Receivers on SID1 and 34 Receivers on SID2. Port 1 on each SID is reserved as a data network port, as well as the last 8 unused ports on SID2. It is recommended that port 1 on SID1 be used to connect to the rest of the network. The remaining data network ports may be used for any data network device.



NOTE: The stack/port notation for the switches is in the format `giSID/0/port`. It is important that the SIDs are assigned properly.

1. Connect to the Master Switch – the switch with SID 1 – with the included console cable and create a serial connection to the switch at a baud rate of `115200-8n1`. The Master switch will yield a `switch#` prompt. All other SIDs will yield a > prompt.

2. Power on the switch and allow it to run through the boot sequence. When it finishes, the prompt will ask for a username and password. Both are `cisco`.

3. Create one VLAN to hold all Just Add Power ports. For this example we'll use VLAN 2.

```
config
vlan database
vlan 2
end
```

```
switch7aa1b3#config
switch7aa1b3(config)#vlan database
switch7aa1b3(config-vlan)#vlan 2
switch7aa1b3(config-vlan)#end
```

4. Make all Just Add Power ports a member of VLAN 2 and disable auto-configuration of ports.

```
config
interface range gi1/0/2-48,gi2/0/2-40
y
no macro auto smartport
switchport access vlan 2
end
```

```
switchf1d871#config
switchf1d871(config)#interface range gi1/0/2-48,gi2/0/2-40
Configuring all ports may consume an excessive amount of time. Define only the r
equired ports to save time.
Do you wish to continue? (Y/N)[N] Y
switchf1d871(config-if-range)#no macro auto smartport
switchf1d871(config-if-range)#switchport access vlan 2
switchf1d871(config-if-range)#end
```

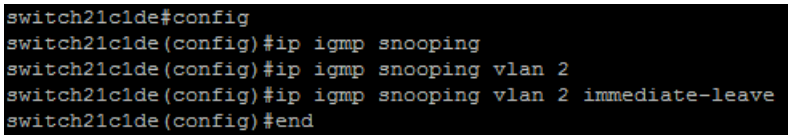
5. Give an IP address to VLAN 2 that is in the same subnet as the Just Add Power devices. We recommend using the first available IP: 10.0.0.1 for this example

```
config
interface vlan 2
ip address 10.0.0.1 255.0.0.0
end
```

```
switch7aa1b3#config
switch7aa1b3(config)#interface vlan 2
switch7aa1b3(config-if)#ip address 10.0.0.1 255.0.0.0
switch7aa1b3(config-if)#end
```

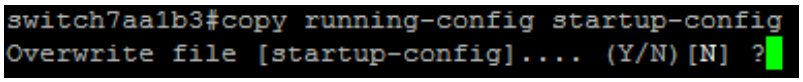
6. Enable IGMP Snooping on the VLAN with Just Add Power devices.

```
config
ip igmp snooping
ip igmp snooping vlan 2
ip igmp snooping vlan 2 immediate-leave
end
```



7. Save the current configuration.

```
copy running-config startup-config
y
```



Congratulations! The SG550X switch is configured to work with multicast switching.

HDMI Matrix Switching Commands

To switch sources, the control system will access the Just Add Power Receiver via telnet or API. Then set the Multicast IP of the Receiver to match the Multicast IP of the Transmitter using the commands below.

See Multicast Switching documentation for more information.

Example Running Configuration

Once the switch is configured, view the full details with the command:

```
show running-config
```

The resulting output (after hitting the Space Bar a couple of times) will look like what is shown below if all instructions are followed for a 3-source, 5-display switch configuration.

```
switchf1d871#show running-config
config-file-header
switchf1d871
v2.3.5.63 / RLINUX_923_093
CLI v1.0
file SSD indicator encrypted
@
ssd-control-start
ssd config
ssd file passphrase control unrestricted
no ssd file integrity control
ssd-control-end cb0a3fdb1f3a1af4e4430033719968c0
!
!
unit-type-control-start
unit-type unit 1 network gi uplink te
unit-type unit 2 network gi uplink te
unit-type unit 3 network gi uplink te
unit-type unit 4 network gi uplink te
unit-type unit 5 network gi uplink te
unit-type unit 6 network gi uplink te
unit-type unit 7 network gi uplink te
unit-type unit 8 network gi uplink te
unit-type-control-end
!
vlan database
vlan 2
exit
voice vlan oui-table add 0001e3 Siemens_AG_phone________
voice vlan oui-table add 00036b Cisco_phone______________
voice vlan oui-table add 00096e Avaya___________________
voice vlan oui-table add 000fe2 H3C_Aolynk_______________
voice vlan oui-table add 0060b9 Philips_and_NEC_AG_phone
voice vlan oui-table add 00d01e Pingtel_phone___________
voice vlan oui-table add 00e075 Polycom/Veritel_phone___
voice vlan oui-table add 00e0bb 3Com_phone______________
bonjour interface range vlan 1
hostname switchf1d871
!
interface vlan 2
 ip address 10.0.0.1 255.0.0.0
!
interface GigabitEthernet1/0/2
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/3
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/4
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/5
 switchport access vlan 2
 no macro auto smartport
```

```
!
interface GigabitEthernet1/0/6
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/7
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/8
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/9
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/10
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/11
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/12
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/13
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/14
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/15
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/16
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/17
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/18
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/19
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/20
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/21
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/22
 switchport access vlan 2
 no macro auto smartport
!
```

```
interface GigabitEthernet1/0/23
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/24
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/25
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/26
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/27
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/28
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/29
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/30
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/31
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/32
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/33
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/34
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/35
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/36
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/37
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/38
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/39
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/40
 switchport access vlan 2
```

```
 no macro auto smartport
!
interface GigabitEthernet1/0/41
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/42
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/43
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/44
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/45
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/46
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/47
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet1/0/48
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/2
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/3
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/4
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/5
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/6
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/7
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/8
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/9
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/10
 switchport access vlan 2
 no macro auto smartport
```

```
!
interface GigabitEthernet2/0/11
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/12
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/13
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/14
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/15
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/16
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/17
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/18
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/19
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/20
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/21
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/22
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/23
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/24
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/25
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/26
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/27
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/28
```

```
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/29
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/30
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/31
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/32
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/33
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/34
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/35
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/36
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/37
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/38
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/39
 switchport access vlan 2
 no macro auto smartport
!
interface GigabitEthernet2/0/40
 switchport access vlan 2
 no macro auto smartport
!
exit
ip igmp snooping
ip igmp snooping vlan 2
ip igmp snooping vlan 2 immediate-leave
```

Troubleshooting

1. The switch lost power in the middle of configuration

   None of the commands that were entered were saved. Restart the configuration from the beginning.

2. The switch needs to be reset to default

   On the front left side of the switch is a small opening labeled *Reset*. Holding that button down (use a paperclip or pin) for more than 20 seconds will reset the switch to factory default settings.

   Alternatively, enter the following CLI commands to reset the switch to the default settings:

```
delete startup-config
y       [confirm]
reload
y       [confirm]
```

```
switch7aa1b3#delete startup-config
Delete startup-config? (Y/N)[N] Y
switch7aa1b3#reload
You haven't saved your changes. Are you sure you want to
continue ? (Y/N)[N] Y
```