
RWL Tech Note

A5500 IRF



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Table of Contents

Proprietary Notice	2
1. Introduction	5
1.1. Purpose and Scope.....	5
1.2. Sample Configurations.....	5
1.3. Related Documents and References.....	5
1.4. Public References.....	6
1.4.1. <i>General Information</i>	6
1.4.2. <i>HP Networking</i>	6
1.5. Definitions and Abbreviations.....	6
1.6. Conventions used in this Document.....	6
2. Configuration	7
2.1. Equipment Used.....	7
2.1.1. <i>Top Switch</i>	7
2.1.2. <i>Bottom Switch</i>	8
2.2. IRF Configuration.....	9
2.2.1. <i>Renumber</i>	9
2.2.2. <i>Priority</i>	9
2.2.3. <i>IRF-ports</i>	9
2.2.4. <i>Connect Cables</i>	11
2.2.5. <i>IRF Virtual Switch Creation Successful</i>	12
3. Other Configuration Options	13
3.1. Increasing the IRF Link Bandwidth Capacity.....	13
3.1.1. <i>IRF-port Reconfiguration</i>	13
3.1.2. <i>Connect Cables</i>	14
3.1.3. <i>Successful Bandwidth Increase</i>	14
3.2. Different Physical Port Configurations.....	15
3.2.1. <i>Preparation</i>	15
3.2.2. <i>Connect Cables</i>	16
3.2.3. <i>IRF Virtual Switch Creation Successful</i>	16
3.3. Adding an Additional Switch To the IRF Virtual Switch.....	17
3.3.1. <i>Preparation – New Switch</i>	17
3.3.2. <i>Preparation – Existing IRF</i>	17
3.3.3. <i>Connect Cables</i>	18
3.3.4. <i>Successful</i>	19
3.4. Extend the Chain into a Loop.....	20
3.4.1. <i>Modify Existing IRF Topology</i>	20
3.4.2. <i>Connect Cable</i>	21
3.4.3. <i>Successful</i>	21
3.5. Replace a Failed Switch.....	22
3.5.1. <i>Switch 3 Fails</i>	22
3.5.2. <i>Replace Switch</i>	22
3.5.3. <i>IRF Configuration</i>	23
3.5.4. <i>Connect Cables</i>	23
3.5.5. <i>Successful</i>	24



4. Appendix A: Error Conditions and Notes.....	25
4.1. 10Gb Interface View.....	25
4.2. Reboot.....	25
4.2.1. <i>Requirement</i>	25
4.2.2. <i>Whole IRF Virtual Switch</i>	25
4.2.3. <i>Switchto</i>	25
4.3. Removing Old Configurations.....	26
4.3.1. <i>Clear Config</i>	26
4.3.2. <i>Mismatched IRF-ports</i>	27
5. Appendix B: Configs.....	28
5.1. Basic Initial Switch Configuration.....	28



1. Introduction

1.1. Purpose and Scope

HP Networking is the networking division of Hewlett Packard. The extensive product line-up includes products that range from high-end core network functionality down to small SMB unmanaged switches.

This document will focus on the A5500 switches from the A Series (Advanced) that are ideally suited for linking together with Intelligent Resilient Framework (IRF) to form a single logical entity – a virtual switch. The information provided in this document is designed to assist a suitably skilled practitioner to understand and then design or implement a network environment based on the HP Networking A5500 switches with IRF.

1.2. Sample Configurations

HP Networking has developed one or more sample configurations to show possible configuration scenarios of IRF on the A5500 switches. They are samples only, and do not take into account specific requirements or restrictions that may be present in a customer production environment.

1.3. Related Documents and References

Version/Date	Author	Document Name
Jul-2010	Richard Litchfield	RWL Tech Note – HPN A Series C-Class Connectivity



1.4. Public References

1.4.1. General Information

<http://www.hp.com/go/convergedinfrastructure>

HP Converged Infrastructure

<http://forums.itrc.hp.com/>

Support forums for all HP products

<http://www.visiocafe.com/hp.htm>

Hewlett Packard Visio collection: HP's official Visio collection includes front and rear physical shapes as well as "logical" shapes and 3D Isometric Collection which are used for detailed design drawings.

1.4.2. HP Networking

<http://www.hp.com/go/networking>

The HP Networking starting point!

<http://h10010.www1.hp.com/wwpc/us/en/sm/WF05a/12883-12883-4172267-4172302-4172278-4174795.html>

HP A5500G EI Switch Series

<http://www.3com.com/swd/jsp/user/result.jsp?selected=2&sort=effdt&sku=0235A253&order=desc>

Manuals for the A5500 (24 port)

1.5. Definitions and Abbreviations

HP	Hewlett Packard
HPN	HP Networking
IRF	Intelligent Resilient Framework
HPGM	HP Global Method (Project Management)
NIC	Network Interface Card
OS	Operating System
POE	Power over Ethernet
VLAN	Virtual Local Area Network

1.6. Conventions used in this Document

CLI switch output.

Specific CLI commands.

Key items to focus on.



2. Configuration

2.1. Equipment Used

2.1.1. Top Switch

The first switch is an A5500 with a dual-port CX4 10Gb module, labelled "top".

```
[top]display version
H3C Comware Platform Software
Comware Software, Version 5.20, Release 2202P21
Copyright (c) 2004-2010 Hangzhou H3C Tech. Co., Ltd. All rights reserved.
H3C S5500-28C-PWR-EI uptime is 0 week, 0 day, 1 hour, 43 minutes

H3C S5500-28C-PWR-EI with 1 Processor
256M bytes SDRAM
32768K bytes Flash Memory

Hardware Version is REV.C
CPLD Version is 002
Bootrom Version is 608
[SubSlot 0] 24GE+4SFP+POE Hardware Version is REV.C
[SubSlot 1] 2 CX4 Hardware Version is REV.A
```

```
[top]display stp
Protocol Status      :disabled
Protocol Std.       :IEEE 802.1s
Version             :3
CIST Bridge-Prio.   :32768
MAC address         :3ce5-a630-6f4d
```



2.1.2. Bottom Switch

The first switch is an A5500 with a dual-port CX4 10Gb module, labelled "bottom".

```
[bottom]display version
H3C Comware Platform Software
Comware Software, Version 5.20, Release 2202P21
Copyright (c) 2004-2010 Hangzhou H3C Tech. Co., Ltd. All rights reserved.
H3C S5500-28C-PWR-EI uptime is 0 week, 0 day, 1 hour, 43 minutes
```

```
H3C S5500-28C-PWR-EI with 1 Processor
256M bytes SDRAM
32768K bytes Flash Memory
```

```
Hardware Version is REV.C
CPLD Version is 002
Bootrom Version is 608
[SubSlot 0] 24GE+4SFP+POE Hardware Version is REV.C
[SubSlot 1] 2 CX4 Hardware Version is REV.A
```

```
[bottom]display stp
Protocol Status      :disabled
Protocol Std.       :IEEE 802.1s
Version             :3
CIST Bridge-Prio.   :32768
MAC address         :3ce5-a630-628d
```




2.2. IRF Configuration

2.2.1. Renumber

- Renumber the bottom switch

```
[bottom] irf member 1 renumber 2
```

Warning: Renumbering the switch number may result in configuration change or loss.
Continue?(Y/N)y

- Save the configuration.
- Reboot (from <user> prompt).
- After the switch completes the restart, the switch will become member number 2, and this will be shown as "2" on the front panel as well.

2.2.2. Priority

The higher the priority number, the more likely the switch is to become the master of the IRF group.

- Change the priority of the switches so that there is at least one master (switch 1).

```
[top] irf member 1 priority 32
```

```
[bottom] irf member 2 priority 1
```

2.2.3. IRF-ports

IRF-ports are used to define the IRF links between the switches. IRF-port 1 can only ever connect to IRF-port 2. In this simple configuration, switch 1 (top, physical port 1, defined as IRF-port 1) will have a single link to switch 2 (bottom, physical port 2, defined as IRF-port 2).

2.2.3.1. Configure the IRF-port on switch 1

```
[top] irf member 1 irf-port 1 port 1
```

```
[top] display irf configuration
```

MemberID	NewID	IRF-Port1	IRF-Port2
*+1	1	1	disable

* indicates the device is the master.

+ indicates the device through which the user logs in.

- Save the configuration.
- Reboot (from <user> prompt).

```
[top] display irf topology
```

Topology Info

```
-----  
Switch  Link      IRF-Port1      IRF-Port2  
member  neighbor  Link  member  neighbor  Belong To  
*+1     DOWN      1         --      DISPLAY  --      --      3ce5-a630-6f60  
-----
```

* indicates the device is the master.

+ indicates the device through which the user logs in.



2.2.3.2. Configure the IRF-port on switch 2

```
[bottom] irf member 2 irf-port 2 port 2
```

```
[bottom] display irf configuration
```

MemberID	NewID	IRF-Port1	IRF-Port2
*+2	2	disable	2

* indicates the device is the master.

+ indicates the device through which the user logs in.

- Save the configuration.
- Reboot (from <user> prompt).

```
[bottom] display irf topology
```

Topology Info

Switch	Link	IRF-Port1		IRF-Port2		Belong To
		member	neighbor	member	neighbor	
*2	DOWN	2	--	DISPLAY	--	3ce5-a630-62a0

* indicates the device is the master.

+ indicates the device through which the user logs in.



2.2.4. Connect Cables

- Switch 1 is on the top, switch 2 is on the bottom.
- When the cable is connected, the second switch (not master) will restart.



[bottom]

```
#Apr 26 12:03:36:691 2000 bottom STM/4/LINK STATUS CHANGE:  
Trap 1.3.6.1.4.1.25506.2.91.6.0.1<hh3cStackPortLinkStatusChange>: Physical index  
of the member is 3, member ID is 2. Link status of the IRF port with port index 2  
and member ID 2 turned to 1.  
Starting.....
```



2.2.5. IRF Virtual Switch Creation Successful

After the second switch restarts and joins the IRF group, IRF should be working.

- Rename the IRF group to something more meaningful than the original name of the master switch.

```
[top]sysname irf
```

- Check IRF details.

```
[irf]display irf configuration
```

```
MemberID      NewID      IRF-Port1      IRF-Port2
*+1           1          1              disable
  2           2          disable        2
```

* indicates the device is the master.

+ indicates the device through which the user logs in.

```
[irf]display irf topology
```

Topology Info

```
-----
Switch  Link      IRF-Port1      IRF-Port2      Belong To
  2     DISPLAY  --             --             3ce5-a630-6f60
*+1     UP        1              2              3ce5-a630-6f60
-----
```

* indicates the device is the master.

+ indicates the device through which the user logs in.

```
[irf]display switchover state
```

```
Master HA State to Slot [2]: Realtime backup to slave.
Master HA State to Slot [3]: Slave is absent.
Master HA State to Slot [4]: Slave is absent.
Master HA State to Slot [5]: Slave is absent.
Master HA State to Slot [6]: Slave is absent.
Master HA State to Slot [7]: Slave is absent.
Master HA State to Slot [8]: Slave is absent.
Master HA State to Slot [9]: Slave is absent.
```



3. Other Configuration Options

3.1. Increasing the IRF Link Bandwidth Capacity

In this Section, the 10Gb IRF link created in Section 2.2 will be doubled in capacity to 20Gb.

3.1.1. IRF-port Reconfiguration

- From Section 2.2.5, the existing IRF-port configuration is:

```
[irf]display irf topology
```

Topology Info

```
-----
```

Switch	Link	IRF-Port1		IRF-Port2		Belong To	
		member	neighbor	Link	member		neighbor
2	DISPLAY	--	--	UP	2	1	3ce5-a630-6f60
*+1	UP	1	2	DISPLAY	--	--	3ce5-a630-6f60

```
-----
```

* indicates the device is the master.

+ indicates the device through which the user logs in.

- This needs to be modified so that the other 10Gb ports are also included within the existing IRF-ports. (New IRF-ports do not need to be created.)

```
[irf]irf member 1 irf-port 1 port 1 2
```

```
[irf]irf member 2 irf-port 2 port 2 1
```

- The IRF configuration shows correct info, but no change will occur until the switches are restarted.

```
[irf]display irf configuration
```

```
-----
```

MemberID	NewID	IRF-Port1	IRF-Port2
*+1	1	1,2	disable
2	2	disable	1,2

```
-----
```

* indicates the device is the master.

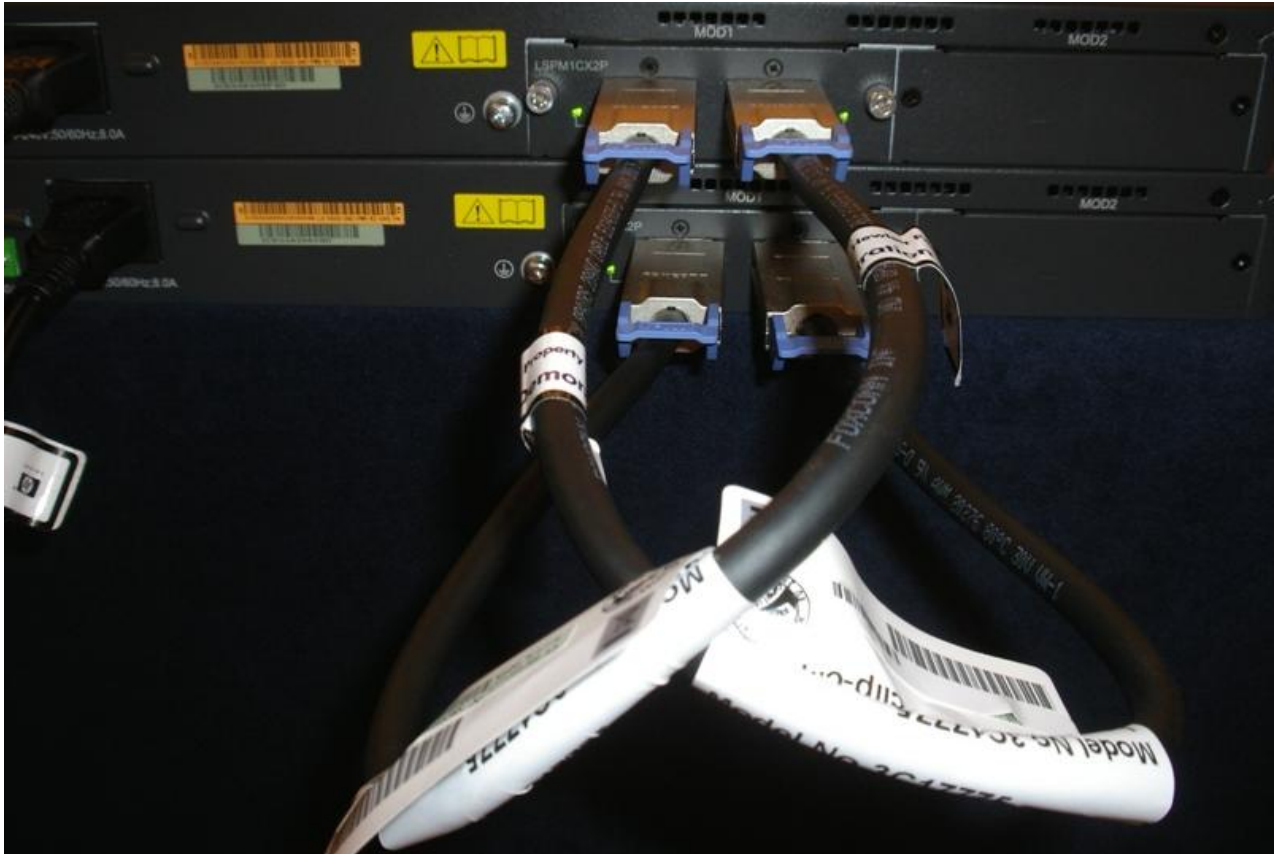
+ indicates the device through which the user logs in.

- Save the configuration.
- Either reboot the entire IRF virtual switch (from <user> prompt) – refer to Section 4.2.2,
- Or power off/on the master switch, wait for it to complete the restart, and power off/on the other switch.
- Restarting both switches is required because the IRF configuration has changed. An automatic restart will NOT occur.



3.1.2. Connect Cables

- When the second cable is connected, the IRF-port bandwidth will have increased from 10Gb to 20Gb.
- Neither switch will restart when the second cable is connected.



3.1.3. Successful Bandwidth Increase

- Works OK!
- The cable failover test passes (disconnect one link, wait, reconnect, wait, disconnect other link, wait, reconnect).



3.2. Different Physical Port Configurations

It is only possible to connect IRF-port 1 to IRF-port 2. It is impossible to connect IRF-port 1 to IRF-port 1, or IRF-port 2 to IRF-port 2.

It is also commonly said that the physical ports on each switch must also be 1-2 and not 1-1 or 2-2.

In this Section, it will be shown that only the IRF-port numbers are relevant. It may be easier to match physical port numbers, but that will not always be possible, especially with 2 x 10Gb modules providing ports 1,2,3,4.

3.2.1. Preparation

- Clear any existing IRF configurations. Remember to restart. Refer to Section 4.3 for details.
The most important command is:

```
undo irf member n irf-port n
```

- Create new IRF-ports. Note that both IRF ports have been assigned 10Gb port 1.

```
[top] irf member 1 irf-port 1 port 1  
[bottom] irf member 2 irf-port 2 port 1
```

- Save the configuration on each switch.
- Reboot each switch (from <user> prompt).

After restarting, confirm IRF-port allocations are correct (ie both say physical port 1).

```
[top] display irf configuration
```

```
MemberID   NewID      IRF-Port1   IRF-Port2  
*+1        1          1           disable
```

* indicates the device is the master.
+ indicates the device through which the user logs in.

```
[bottom] display irf configuration
```

```
MemberID   NewID      IRF-Port1   IRF-Port2  
*+2        2          disable     1
```

* indicates the device is the master.
+ indicates the device through which the user logs in.



3.2.2. Connect Cables

- Connect the 10Gb cable.
- The slave switch will restart.



3.2.3. IRF Virtual Switch Creation Successful

- After the second switch restarts and joins the IRF group, IRF should be working.
- Rename the IRF group to something more meaningful than the original name of the master switch.

```
[top]sysname irf
```

- Check IRF details. Note that IRF is functional, and physical port numbers are the same. Physical port numbers are irrelevant; only the IRF-port number is important.

```
[irf]display irf configuration
```

```
MemberID      NewID      IRF-Port1      IRF-Port2
*+1           1          1              disable
  2           2          disable        1
```

* indicates the device is the master.

+ indicates the device through which the user logs in.

```
[irf]display irf topology
```

Topology Info

```
-----  
Switch  Link      IRF-Port1      IRF-Port2      Belong To
  2      DISPLAY  --            --            UP            1              3ce5-a630-6f60
*+1      UP        1              2              DISPLAY      --            --            3ce5-a630-6f60
```

* indicates the device is the master.

+ indicates the device through which the user logs in.



3.3. Adding an Additional Switch To the IRF Virtual Switch

3.3.1. Preparation – New Switch

In this example, a third switch will be added to the IRF Virtual switch. It will be in a chain configuration, with the additional connection going from switch 1 to switch 3.

- Obtain the additional switch. In this example it is labelled “extra”.
- Clear any existing IRF configurations. Remember to restart. Refer to Section 4.3 for details.

The most important command is:

```
undo irf member n irf-port n
```

- (Optional) Manually renumber the new switch to member 3.

```
[extra] irf member 1 renumber 3
```

Warning: Renumbering the switch number may result in configuration change or loss.
Continue?(Y/N)y

- Configure an IRF-port on the additional switch, save and reboot.

```
[extra] irf member 3 irf-port 1 port 1
```

- Save the configuration.
- Reboot (from <user> prompt).
- After restart, the front panel indicator will show 3.

3.3.2. Preparation – Existing IRF

- Create new IRF-ports on the existing IRF virtual switch. (Note that both existing IRF ports have been assigned 10Gb port 1 in Section 3.2.)
- Create a new IRF-port that the extra switch will connect to.

```
[irf] irf member 1 irf-port 2 port 2
```

- Now you can see the second IRF port is configured

```
[irf] display irf topology
```

Topology Info

Switch	Link	IRF-Port1		Link	IRF-Port2		Belong To
		member	neighbor		member	neighbor	
2	DISPLAY	--	--	UP	1	1	3ce5-a630-6f60
*+1	UP	1	2	DOWN	2	--	3ce5-a630-6f60

* indicates the device is the master.

+ indicates the device through which the user logs in.

- Save the new configuration.
- Manually restart switch 1 (see Section 4.2).



3.3.3. Connect Cables

- Wait for the switch to complete startup, and connect the 10Gb cable.
- The extra switch will restart.





3.3.4. Successful

- Switch 3 is now a member of the IRF virtual switch.

```
[irf]display irf
```

```
Switch  Role      Priority  CPU-Mac
*+1     Master    32       3ce5-a630-6f60
  2     Slave     1        3ce5-a630-62a0
  3     Slave     1        3ce5-a630-98a0
```

* indicates the device is the master.
+ indicates the device through which the user logs in.

The Bridge MAC of the IRF is: 3ce5-a630-6f4d
Auto upgrade : yes
Mac persistent : 6 min

```
[irf]display irf topology
```

Topology Info

```
-----  
Switch  Link      IRF-Port1      IRF-Port2      Belong To  
  2     DISPLAY  member neighbor Link  member neighbor  
*+1     UP        1      2      UP   1     1     3ce5-a630-6f60  
  3     UP        1      1      UP   2     3     3ce5-a630-6f60  
  3     UP        1      1      DISPLAY --   --   3ce5-a630-6f60
```

* indicates the device is the master.
+ indicates the device through which the user logs in.



3.4. Extend the Chain into a Loop

Following on from Section 3.3, in this Section the chain will be converted into a loop.

3.4.1. Modify Existing IRF Topology

- The additional link required to create the loop will go from switch 2 to switch 3. The existing IRF topology is shown below, with the missing IRF-ports highlighted.

```
[irf]display irf topology
```

Topology Info

```
-----
```

Switch	Link	IRF-Port1		IRF-Port2			Belong To
		member	neighbor	Link	member	neighbor	
2	DISPLAY	--	--	UP	1	1	3ce5-a630-6f60
*+1	UP	1	2	UP	2	3	3ce5-a630-6f60
3	UP	1	1	DISPLAY	--	--	3ce5-a630-6f60

```
-----
```

* indicates the device is the master.

+ indicates the device through which the user logs in.

- Created the 2 new IRF-ports.

```
[irf]irf member 2 irf-port 1 port 2
```

```
[irf]irf member 3 irf-port 2 port 2
```

- Save the new configuration.
- Manually restart switch 2 and switch 3 (see Section 4.2). Do this separately to maximise the availability of the IRF virtual switch.
Note that switch 1 does not need to be restarted because it has no associated IRF topology changes.
- After the switches have been restarted, confirm the IRF topology changes have been successful. The Link state will show down until the final cable is connected.

```
[top]display irf topology
```

Topology Info

```
-----
```

Switch	Link	IRF-Port1		IRF-Port2			Belong To
		member	neighbor	Link	member	neighbor	
2	DOWN	2	--	UP	1	1	3ce5-a630-6f60
*+1	UP	1	2	UP	2	3	3ce5-a630-6f60
3	UP	1	1	DOWN	2	--	3ce5-a630-6f60

```
-----
```

* indicates the device is the master.

+ indicates the device through which the user logs in.



3.4.2. Connect Cable

- Connect the last 10Gb cable.
- No switches need to restart because all switches are members of the IRF virtual switch, and the IRF topology has already been changed.

3.4.3. Successful

```
[top]display irf topology
```

Topology Info

```
-----  
Switch  Link      IRF-Port1      IRF-Port2  
        member neighbor Link  member neighbor  Belong To  
2       UP        2              3     UP    1      1      3ce5-a630-6f60  
*+1    UP        1              2     UP    2      3      3ce5-a630-6f60  
3       UP        1              1     UP    2      2      3ce5-a630-6f60  
-----
```

* indicates the device is the master.

+ indicates the device through which the user logs in.

- The cable failover test passes (disconnect one link, wait, reconnect, wait, disconnect other link, wait, reconnect).



3.5. Replace a Failed Switch

3.5.1. Switch 3 Fails

- In this scenario, switch 3 has failed, and needs to be replaced.

```
%Apr 26 13:35:58:610 2000 top DEV/4/BOARD REMOVED:  
Board is removed from Frame 0 Slot 3, type is MAIN_BOARD_TYPE_24_POE.  
  
%Apr 26 13:35:58:611 2000 top HA/4/HA_LOG:Slave board in slot 3 is removed.  
%Apr 26 13:35:58:611 2000 top STM/4/LINK STATUS CHANGE:Slot=2;  
IRF port 1 is down.  
System is busy with VIU configuration recovery, please wait a moment...
```

```
[top]display irf topology
```

Topology Info

```
-----  
Switch  Link      IRF-Port1      IRF-Port2  
      member neighbor Link  member neighbor  Belong To  
+2     DOWN      1      --      UP    2      1      3ce5-a630-6f60  
*1     UP        1      2      DOWN  2      --      3ce5-a630-6f60  
-----
```

* indicates the device is the master.
+ indicates the device through which the user logs in.

- Note that only switch 1 and 2 are still showing in the IRF topology.

3.5.2. Replace Switch

- Obtain the new switch.
- Position it appropriately
- Install the 10Gb interface module, but *DO NOT* connect and cables.
- Power on and check basic config, making minimal changes as required. (Remember this config will be overwritten as soon as the switch is brought into IRF.)
- Confirm that there is no existing IRF configuration (see Section 4.3) and rectify if required. The new switch should have similar output to this:

```
[new]display irf
```

```
Switch  Role    Priority  CPU-Mac  
*+1     Master  1        3ce5-a630-87e0  
-----
```

* indicates the device is the master.
+ indicates the device through which the user logs in.

```
The Bridge MAC of the IRF is: 3ce5-a630-87cd  
Auto upgrade           : yes  
Mac persistent         : 6 min
```

```
[new]display irf topology
```

Topology Info

```
-----  
Switch  Link      IRF-Port1      IRF-Port2  
      member neighbor Link  member neighbor  Belong To  
*+1     DISPLAY  --      --      DISPLAY  --      --      3ce5-a630-87e0  
-----
```

* indicates the device is the master.
+ indicates the device through which the user logs in.



3.5.3. IRF Configuration

- Automatic re-numbering is a feature of the A5500 switches, so manually numbering a switch is not necessary.
- Create the relevant IRF-ports. These must fit within the existing IRF topology.
In this case, IRF-port 1 and 2 are required to recreate the loop that existed before switch 3 failed.

```
[new] Irf member 1 irf-port 1 port 1  
[new] Irf member 1 irf-port 2 port 2
```

- Save the configuration.
- Reboot the switch (from <user> prompt).
- Note that the existing switches do not need to be restarted because they already have a valid IRF-port configuration.

3.5.4. Connect Cables

- When the first cable is connected, the new switch will restart.
- Connect all cables. Make sure they are connected the same way as the previous switch (and as dictated by the IRF-port connections).

```
#Apr 26 13:53:58:240 2000 irf STM/4/LINK STATUS CHANGE:  
Trap 1.3.6.1.4.1.25506.2.91.6.0.1<hh3cStackPortLinkStatusChange>: Physical index  
of the member is 2, member ID is 1. Link status of the IRF port with port index 2  
and member ID 1 turned to 1.  
%Apr 26 13:53:58:554 2000 irf STM/4/LINK STATUS CHANGE:  
IRF port 2 is up.  
%Apr 26 13:53:58:645 2000 irf STM/4/MERGE:  
Merge occurs.  
#Apr 26 13:53:59:488 2000 irf STM/4/LINK STATUS CHANGE:  
Trap 1.3.6.1.4.1.25506.2.91.6.0.1<hh3cStackPortLinkStatusChange>: Physical index  
of the member is 2, member ID is 1. Link status of the IRF port with port index 2  
and member ID 1 turned to 2.  
%Apr 26 13:53:59:802 2000 irf STM/4/LINK STATUS CHANGE:  
IRF port 2 is down.
```



3.5.5. Successful

- The new switch has automatically renumbered!
- In the photo below, the switch member numbers are (from top to bottom): 3, off, 1, 2.



- The new switch has been successfully included into the IRF topology.

```
[irf]display irf
Switch      Role      Priority   CPU-Mac
*+1         Master   32        3ce5-a630-6f60
  2         Slave    1         3ce5-a630-62a0
  3         Slave    1         3ce5-a630-87e0
```

* indicates the device is the master.
+ indicates the device through which the user logs in.

The Bridge MAC of the IRF is: 3ce5-a630-6f4d
Auto upgrade : yes
Mac persistent : 6 min

```
[irf]display irf topology
Topology Info
```

```
-----
Switch  Link      IRF-Port1      IRF-Port2
member  neighbor  Link  member  neighbor  Belong To
*+1     UP        1         2         UP        3         3ce5-a630-6f60
  2     UP        1         3         UP        2         3ce5-a630-6f60
  3     UP        1         1         UP        2         3ce5-a630-6f60
-----
```

* indicates the device is the master.
+ indicates the device through which the user logs in.



4. Appendix A: Error Conditions and Notes

A number of errors and observations were made whilst this document was being prepared. These are documented in this Section for future reference.

4.1. 10Gb Interface View

Once the IRF-port has been assigned a 10Gb port, that 10Gb port will no longer appear in the interface list.

In this example, the 2 port CX4 module provides 2 x 10Gb ports (XGE1/1/1 and 1/1/2).

Display brief interface

XGE1/1/1	UP	10G	full	access	1
XGE1/1/2	UP	10G	full	access	1

After XGE1/1/1 has been assigned to an IRF-port, it will no longer be visible in the interface display.

4.2. Reboot

4.2.1. Requirement

The switch should be restarted with the reboot command every time a change is made to the IRF configuration. This is especially true of any IRF-port changes, including adding an IRF-port or changing an IRF-port configuration.

4.2.2. Whole IRF Virtual Switch

Using the reboot command at the <user> prompt will cause the entire IRF stack to restart.

4.2.3. Switchto

Use the switchto command to get to a specific console.

```
[irf] irf switch-to 2  
<irf-Slave#2>
```

Note that the Reboot command doesn't work from the #n prompt. Removing and reinserting the power cable is generally required to restart an individual switch if restarting the entire IRF virtual switch is not convenient.



4.3. Removing Old Configurations

It is important to remove old IRF configuration components before trying to join switches into an IRF virtual switch. Failure to do so may make the IRF process difficult or impossible, or may lead to unexpected results.

4.3.1. Clear Config

A normal config reset will only clear the config items that are shown in the config files. That does not include the majority of the IRF configuration.

```
<switch>reset saved-configuration
```

To reset the additional IRF configuration, commands similar to the following need to be used, followed by a restart (as per Section 4.2).

```
[switch]undo irf member 2 irf-port 1  
[switch]undo irf member 2 irf-port 2  
[switch]irf member 2 priority 1  
[switch]irf member 2 renumber 1  
[switch]save
```

If you remove all the IRF-ports, and restart, the switch may show “c” on the front panel (for candidate). However, the switch may still have an IRF member ID.





4.3.2. Mismatched IRF-ports

The following errors occurred when 2 switches with incompletely cleared IRF configs attempted to link into an IRF virtual switch.

```
#Apr 26 14:10:43:635 2000 top STM/4/LINK STATUS CHANGE:
  Trap 1.3.6.1.4.1.25506.2.91.6.0.1<hh3cStackPortLinkStatusChange>: Physical index
of the member is 2, member ID is 1. Link status of the IRF port with port index 1
and member ID 1 turned to 1.
%Apr 26 14:10:43:949 2000 top STM/4/LINK STATUS CHANGE:
  IRF port 1 is up.
%Apr 26 14:10:44:40 2000 top STM/4/ISOMER CHECK:
  Neighbor of IRF port 1 can't be stacked.
%Apr 26 14:10:44:152 2000 top STM/4/ISOMER CHECK:
  Neighbor of IRF port 1 can't be stacked.
%Apr 26 14:10:44:264 2000 top STM/4/ISOMER CHECK:
  Neighbor of IRF port 1 can't be stacked.
```

```
[switch]display irf topology
```

Topology Info

```
-----
Switch  Link      IRF-Port1      IRF-Port2
      member neighbor Link      member neighbor  Belong To
*+1     ISOLATE  1      --      DISPLAY  --      --      3ce5-a630-6f60
-----
```

* indicates the device is the master.

+ indicates the device through which the user logs in.

This is another example of an error that may have been caused by incompletely cleared IRF configs.

```
[switch]irf member 2 irf-port 1 port 2
```

```
ERROR : The input port(s) cannot be set or aggregated together.
```



5. Appendix B: Configs

5.1. Basic Initial Switch Configuration

```
#
version 5.20, Release 2202P21
#
sysname H3C
#
irf mac-address persistent timer
irf auto-update enable
undo irf link-delay
#
domain default enable system
#
telnet server enable
#
ip unreachable enable
#
vlan 1
#
radius scheme system
server-type extended
primary authentication 127.0.0.1 1645
primary accounting 127.0.0.1 1646
user-name-format without-domain
#
domain system
access-limit disable
state active
idle-cut disable
self-service-url disable
#
user-group system
#
local-user admin
password simple password
authorization-attribute level 3
service-type telnet
#
interface NULL0
#
interface Vlan-interface1
ip address 192.168.1.251 255.255.255.0
#
interface GigabitEthernet1/0/1
#
interface GigabitEthernet1/0/2
#
interface GigabitEthernet1/0/3
#
interface GigabitEthernet1/0/4
#
interface GigabitEthernet1/0/5
#
interface GigabitEthernet1/0/6
#
```



```
interface GigabitEthernet1/0/7
#
interface GigabitEthernet1/0/8
#
interface GigabitEthernet1/0/9
#
interface GigabitEthernet1/0/10
#
interface GigabitEthernet1/0/11
#
interface GigabitEthernet1/0/12
#
interface GigabitEthernet1/0/13
#
interface GigabitEthernet1/0/14
#
interface GigabitEthernet1/0/15
#
interface GigabitEthernet1/0/16
#
interface GigabitEthernet1/0/17
#
interface GigabitEthernet1/0/18
#
interface GigabitEthernet1/0/19
#
interface GigabitEthernet1/0/20
#
interface GigabitEthernet1/0/21
#
interface GigabitEthernet1/0/22
#
interface GigabitEthernet1/0/23
#
interface GigabitEthernet1/0/24
#
interface GigabitEthernet1/0/25
shutdown
#
interface GigabitEthernet1/0/26
shutdown
#
interface GigabitEthernet1/0/27
shutdown
#
interface GigabitEthernet1/0/28
shutdown
#
interface Ten-GigabitEthernet1/1/2
#
user-interface aux 0 8
user-interface vty 0 4
authentication-mode scheme
#
return
```