Default Terminal Settings

<table>
<thead>
<tr>
<th>Baud Rate</th>
<th>Stop Bits</th>
<th>Data Bits</th>
<th>Flow Control</th>
<th>Parity</th>
</tr>
</thead>
<tbody>
<tr>
<td>9600</td>
<td>1</td>
<td>8</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Configuring Brocade Devices Using CLI

Attach to the serial interface using the straight through console cable provided and your favorite terminal emulator configured with the above settings. You can also use Telnet, SSH and SNMP to configure the device if an IP interface is already available.

After connecting to the serial console port or by remote IP access the following CLI prompt should appear in the terminal emulation window:

Device>  (Start in user EXEC mode)

Navigating the CLI

- Device> ?  (Display command options)
- Device> show  (Display list of commands)
- Device> en<tab>  (Tab key for autofill commands)
- Device> enable  (Enter privilege EXEC mode)

No password has been assigned yet.

Device> conf t  (Abreviate commands ex conf t = configure terminal)
Device(config)#  (Now in Global CONFIG Mode)
Device(config)# end  (End privilege EXEC)
Device#exit  (Exit to next higher level)

Device><esc> or <up arrow>  (Scroll back through command history buffer)
Device><esc> or <down arrow>  (Scroll forward through command history buffer)

Additional CLI navigation aids are located at the end of this guide.

CLI Prompt Modes

- Device>  (User EXEC mode)
- Device#  (Privilege EXEC mode)
- Device(config)#  (Global configuration mode)
- Device(config-if-e1000-1/5)  (Physical interface configuration mode)
- Device(config-vif-10)  (Virtual interface configuration mode)
- Device(config-vlan-10)  (VLAN configuration mode)
- Device(config-ospf-router)  (OSPF Router configuration mode)
- Device(config-bgp)  (BGP Router configuration mode)
Saving the Configuration

Device(config)# write memory
(Copy running configuration to startup configuration)
Device(config)# sh run
(View running configuration)
Device(config)# sh config
(View startup configuration)

Other Useful Commands

Device# reload
(Reset the device)
Are you sure? (y or n)
Device# erase start
(Delete the startup configuration file. Reload will restore factory default settings)
Device# show log
(Show syslog entries)
Device# show cpu
(Show current CPU Utilization)
Device# show process cpu
(Show CPU Utilization of different Processes)
Device# show flash
(Show contents of primary and secondary memory locations)
Device# show ver
(Show code version plus system information)
Device# show default
(Show default services)
Device# show default values
(Show default values for services)
Device# show mac
(Show MAC tables)
Device# show arp
(Show ARP tables)
Device# show ip traffic
(Show IP traffic statistics to CPU IP process)

Preliminary Device Configuration

Configuring Local User Accounts and Passwords

Device(config)# enable super-user-password <pwd>
Device(config)# enable read-only-password <pwd>
Device(config)# enable telnet password <pwd>
Device(config)# username <admin> password <pwd>

(NOTE: Passwords can be up to 32 characters long.)

Resetting the super user password

NOTE: Requires direct access to the Serial Port and a System Reset

1. Power cycle the device
2. Within 2 seconds press lower case b
3. Device should resort to boot monitor mode

BOOT MONITOR> no password
BOOT MONITOR> boot system flash primary

Device> enable
No password has been assigned yet
At this point the password can be changed or deleted from the CLI Privileged configuration mode.

### Configuring a System Hostname

Device (config)# **hostname <Device>**

Device(config)# (Prompt changes to reflect new hostname)

### Configuring a Management IP Address on a switch

(Note: If a Brocade Switch is running Layer 2 code, a management IP address is defined for the whole box. If the Switch is running Layer 3 code, management IP addresses must be configured on a management VLAN. See pages 3&4 of this guide to do this.)

Device(config)# **ip address 192.168.10.100/24**  
(Layer-2 IP address)

### Setting SNMP Parameters

Device(config)# **snmp-server community <private> rw**  
(Sets Read/Write Comm String)

Device(config)# **snmp-server community <public> ro**  
(Sets the Read-Only Comm String)

Device(config)# **snmp-server contact <Network Support, 555-1212>**

Device(config)# **snmp-server location <BldgX-Closet123>**

Device(config)# **snmp-server host <a.b.c.d> private**

Device(config)# **snmp-server host <a.b.c.d> public**

### Configure System Time

Device# **clock set <10:15:05 10-15-99>**  
(Local clock configuration)

(Note: By default, Brocade switches and routers do not change the system time for daylight savings time. To enable daylight savings time, enter the following command)

Device(config)# **clock summer-time**

Device(config)# **snmp server <a.b.c.d>**

### Configure System Banners

Device(config)# **banner exec mode c <cr>**

*Enter TEXT message, End with the character c.*

*You are entering Privileged EXEC level Be Careful when typing! c*

(This sets the banner when one enters the Privileged EXEC mode)

Device(config)# **banner motd c (Press Return)**

*Enter TEXT message, End with the character c.*

*Welcome to Device!! c*

(This sets the Banner seen when someone telnets to the device)

### Configure AAA Parameters for Login
aaa authentication default login radius local

(Note: System Default is 255. System max is typically 4095.)

Viewing the Module Inventory

Device (config)# show module

<table>
<thead>
<tr>
<th>Module</th>
<th>Status</th>
<th>Ports</th>
<th>Starting MAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1: B8GMR Fiber Management Module</td>
<td>ACTIVE</td>
<td>8</td>
<td>00e0.5202.a2d4</td>
</tr>
<tr>
<td>S2: B8GMR Fiber Management Module</td>
<td>STANDBY</td>
<td>8</td>
<td>00e0.5202.a334</td>
</tr>
<tr>
<td>S3: B24E Copper Switch Module</td>
<td>OK</td>
<td>24</td>
<td>00e0.5202.a2d4</td>
</tr>
</tbody>
</table>

Configuring MAC Port Security

Device (config)# port security
Device (config-port-security)# enable    (Enables Port-Locking globally)
Device(config)# int e 7/11
Device(config-if-e100-7/11)# port security
Device(config-port-security-e100-7/11)# enable    (Enables Port-Locking per port)
Device(config-port-security-e100-7/11)# secure <0568.1234.ac56>    (Lock a static MAC to the port)
Device(config-port-security)# no enable    (Disables Port-Locking globally)
Device(config-port-security)# show port security

Configuring a Port Based VLAN

(Note: Ports will always be referenced by their module/port number. Port 1 on module 4 is represented as 4/1.)

Device(config)# vlan 401 name <vlan_10-10-201>
Device(config-vlan-401)# untagged ethernet 3/1 to 3/8
Device(config-vlan-401)# tagged ethernet 4/1 to 4/8
(Note: There is one default VLAN, called “default”. The Default vlan-id is 1)

Deleting a VLAN

Device(config)# no vlan <401>
(Note: The default VLAN cannot be deleted however it can be moved to a different VLAN ID.)

Adding a port to a VLAN

Device(config)# vlan <401>
Device(config-vlan-401)# untagged ethernet 2/8
Device(config-vlan-401)# tagged ethernet 2/1

Deleting Ports from a VLAN

Device(config-vlan-401)# no untagged ethernet 2/8
Device(config-vlan-401)# no tagged ethernet 2/1
To Display Ports in a VLAN and Check PVST Status

Device(config)# show vlan
Device(config)# show vlan <401>

Total PORT-VLAN entries: 2

legend: [S=Slot]

PORT-VLAN 401, Name vlan_10-10-201, Priority level0, Spanning tree On
Untagged Ports: (S3) 1 2 3 4 5 6 7 8
Tagged Ports: (S4) 1 2 3 4 5 6 7 8
Uplink Ports: None

Configure Layer 3 IP interfaces

You can create an IP address on a physical port (ie: Port 4/1), or on a VLAN. The VLAN IP Address is configured on a Virtual Ethernet Interface, simply known as a “ve”

To Create an IP Address on a Physical Interface

Device(config)# interface ethernet 4/1
Device(config-if-e1000-4/1)# ip address <192.168.10.201/24>

To Create a Virtual Interface (VE) and Assign it an IP address

Device(config)# vlan <401>
Device(config-vlan-401)# router-interface ve <401>
Device(config-vlan-401)# interface ve <401>
Device(config-vif-401)# ip address <10.10.201.254/24>

Change the IP address of a Virtual Interface:

Device(config)# interface ve <401>
Device(config-vif-401)# no ip address <10.10.201.254/24>
Device(config-vif-401)# ip address <10.10.201.250/24>

To Remove an Interface

Device(config-vif-401)# exit
Device(config)# no interface ve <401>

(Note: To keep things simple…Assign the Virtual Ethernet Interface (ve) the same as the VLAN ID. (ie: VLAN 401 has Virtual Interface 401 associated with it.) This makes it much easier to associate these things together when looking at them as a whole.)

Change the Maximum VE Interfaces Supported

Device(config)# system-max virtual-interfaces 1024

(Note: System Default is 255. System max with a Management Module-4 card and 256 MB memory is 4095.)

To Show the Status of an Interface
Device(config)#show ip interface
Device(config)#show interface [brief]

Rapid Spanning Tree Protocol (802.1W)

Enable Rapid Spanning Tree Globally
Device(config)#spanning-tree 802-1w
Device(config)#no spanning-tree 802-1w (disables Spanning Tree)

Enable Rapid Spanning Tree per VLAN
Device(config)#vlan <401>
Device(config-vlan-401)#spanning-tree 802-1w
Device(config-vlan-401)#no spanning-tree 802-1w (disables Spanning Tree)

Enable Rapid Spanning Tree per Port
Device(config)#interface ethernet 1/1
Device(config-if-1/1)#spanning-tree 802-1w

Changing Priority of RSTP per VLAN or per Port
Device(config)#vlan <401>
Device(config-vlan-401)#spanning-tree 802-1w priority 10 (default priority is 32768)
Device(config-vlan-401)#spanning-tree 802-1w ethernet 1/5 path-cost 15 priority 64

Show Rapid Spanning Tree Details
Device(config)#show 802-1w
Device(config)#show 802-1w detail

Configure Routing

Configuring a Static Route
Device(config)#ip route <10.10.202.0> <255.255.255.0>< 20.20.201.10> 1

View the Route Table
Device(config)#show ip route

Configuring a Static ARP entry
Device(config)#arp 1 < 10.10.201.5> <00:30:6d:15:ec:01> ethernet <4/1>

View the ARP Table
Device(config)#show arp (Note: you can view the entire ARP table, or selective entries)

Clearing the ARP Cache
**RIP Configuration**

Enable RIP Routing Globally

Device(config)# *clear arp*
Device(config)# *clear arp ethernet 4/1*

Put RIP on Network Interfaces

Device(config-rip-router)# *interface ve 1*
Device(config-vif-1)# *ip rip v1-compatible-v2*  
(Enables both RIPv1 and v2 to be used)

Show IP RIP Statistics

Device# *show ip rip*

**OSPF Configuration**

Enable OSPF Routing Globally

Device(config)# *router ospf*
Device(config-ospf-router)#

Assign OSPF Areas

Device(config-ospf-router)# *area <0.0.0.0>*  
(This would be a Core Router)
Device(config-ospf-router)# *area <0>*

Put OSPF on Network Interfaces

Device(config-ospf-router)# *interface ve <1>*
Device(config-vif-1)# *ip ospf area 0.0.0.0*

Modify OSPF Path Costs

Device(config)# *interface e <4/1>*
Device(config-if-e1000-4/1)# *ip ospf cost <10>*

Show OSPF Statistics

Device(config)# *show ip ospf*  
(shows general OSPF configuration details)
Device(config)# *show ip ospf config*  
(shows Router-id & general OSPF configuration details)
Device(config)# *show ip ospf area*  
(shows OSPF area details)
Device(config)# *show ip ospf database*  
(shows link-state database)
Device(config)# *show ip ospf interface*  
(shows which interfaces are configured for OSPF)
Device(config)# *show ip ospf neighbor*  
(shows neighbor OSPF status)
Device(config)# *show ip ospf route*  
(shows routes learned via OSPF)
Virtual Router Redundancy Protocol (VRRP)

Brocade Networks provides a proprietary VRRP implementation called VRRP-E(xtended). Brocade supports VRRP, but VRRP-E is more flexible than VRRP as defined by RFC2338. VRRP-E is virtually the same as VRRP, except in the following ways:

- There is no “Owner” router. You do not need to use an IP address configured on one of the Layer 3 Switches as the virtual router IP Address. The Virtual Routers IP Address is independent of the IP interfaces on the Layer 3 Switches.
- There is no restriction on which router can be the master router. In VRRP, the “Owner” (the Layer 3 Switch on which the IP interface that is used for the Virtual Routers IP Address is configured) must be the default Master.

Enable VRRP-Extended Globally

Device(config)# **router vrrp-extended**
DeviceB(config)# **router vrrp-extended**

Configuring the Master and Backup VRRP-E IP Address

Assume that Interface ve1 on RouterA already exists and has a configured IP address of 10.10.201.251
Assume that Interface ve1 on RouterB already exists and has a configured IP address of 10.10.201.252

**Configuring the Master**

Device(config)# **inter ve <1>**
Device(config-vif-1)# **ip vrrp-extended vrid <1>**
Device(config-vif-1-vrid-1)# **backup priority <110>**
Device(config-vif-1-vrid-1)# **ip-address <10.10.201.254>**
Device(config-vif-1-vrid-1)# **advertise backup**
Device(config-vif-1-vrid-1)# **activate**

**Configuring the Backup**

DeviceB(config)# **inter ve <1>**
DeviceB(config-vif-1)# **ip vrrp-extended vrid <1>**
DeviceB(config-vif-1-vrid-1)# **backup priority <100>**
DeviceB(config-vif-1-vrid-1)# **ip-address <10.10.201.254>**
DeviceB(config-vif-1-vrid-1)# **advertise backup**
DeviceB(config-vif-1-vrid-1)# **activate**

(Note: The default priority of all backup Virtual Routers is 100. Master Router status can be attained by manually making one priority higher than the other.)

Displaying VRRP-E Configuration

Device(config)# **show ip vrrp-e**
Device(config)# **show ip vrrp-e brief**
Device(config)# **show ip vrrp-e status**
Device(config)# **show ip vrrp-e ve 1**

Standards Based VRRP Configuration

Brocade Networks also supports standardized VRRP implementations. Configuration of VRRP is almost identical to VRRP-E except for one step. One of the Routers in a VRRP configuration must be identified as “Owner”, instead of both Routers being identified as “Backups” for VRRP-E. Since one Router is the Owner, the IP Address used for the Virtual Router must be the same as the physical address on that router. It’s not as flexible as VRRP-E, but it meets all standards definitions.
Network Timing Configuration

Enable Network Timing

Device(config)# `sntp server 100.100.100.73 <version>` (version can be 1 to 4…Default is 1)
Device(config)# `sntp server 100.100.100.73 <version>` (up to 3 SNTP servers can be defined)

View Network Timing Statistics

Device(config)# `show snmp associations` (shows clock source information)
Device(config)# `show snmp status` (shows more NTP information)

Access Control List (ACL) Configuration

Configuring ACL’s

Syntax: `access-list <num> permit|deny <ip-protocol> <source-ip>|<hostname> <wildcard>`

[<operator><source-tcp/udp-port> | destination-ip>|<hostname> <wildcard>]

[<operator><destination-tcp/udp-port> | <log>]

Standard Access List Number Range: 1-99
Extended Access List Number Range: 100-199

Device(config)# `access-list 100 permit icmp 209.157.22.0/24 209.157.21.0/24`
Device(config)# `access-list 100 deny tcp host rkwong 209.157.21.0/24 eq telnet log`
Device(config)# `access-list 100 deny udp 209.157.21.0/24 host rkwong eq tftp log`
Device(config)# `access-list 100 deny ip host 209.157.21.100 host 209.157.22.1`
Device(config)# `access-list 100 deny ospf any any`
Device(config)# `access-list 100 permit ip any any`

Deleting ACL’s

Device(config)# `no access-list 100 permit icmp 209.157.22.0/24 209.157.21.0/24` (deletes the entire list)

Enabling an ACL on an Interface

Device(config)# `int eth 3/8`
Device(config-if-1/2)# `ip access-group 100 in`
Device(config-if-1/2)# `int eth 4/3`
Device(config-if-4/3)# `ip access-group 100 out`
Device(config-if-4/3)# `write memory`

Disabling an ACL on an Interface

Device(config)# `int eth 3/8`
Device(config-if-1/2)# `no ip access-group 100 in`
(Note: If one has a long Access List, and needs to insert a new entry into that list, use the following steps to accomplish this:)

1. Execute a show running-config on the device
2. Cut and paste the Access List entries into a Notepad or text file of some kind
3. Add or delete new entries into the Access List
4. Back on the router, disable the Access Group on the interface(s) it is applied  (See above)
5. Disable the Access list  (See above)
6. Cut the Access List from the Notepad and Paste right into the Command Line Interface
   a. The Access List entries will execute automatically
7. Re-enable the Access Group to the Interface(s) where it was applied previously
8. done…

**Link Aggregation Configuration**

**Manually Configuring Link Aggregation**

```
Device(config)# trunk switch ethernet 1/1 to 1/2
Device(config)# trunk switch ethernet 2/1 to 2/4 ethernet 4/5 to 4/8
Device(config)# trunk switch ethernet 3/1 to 3/1 ether 4/1 to 4/1     (Trunks 10G cards together)
Device(config)# trunk deploy
```

Note: Trunk Definition Rules (Some rules may vary depending on device type, please refer to the specific device manual for additional information)

- You can configure up to 64 trunk groups on a Chassis device.
- You can configure up to 8 ports in a trunk group on a Chassis device.
- Each trunk group must start with a primary port. Primary ports are always odd-numbered ports: Chassis devices: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23
- For 10G cards, trunk group must start on an odd-numbered card-slot (ie: 1, 3, 5, 7, etc)
- Trunk members must have the same characteristics (ie. Speed, tagging, etc)
- All the ports must be connected to the same device at the other end.

**Display Trunk Configurations**

```
Device(config)# show trunk
```

**Dynamic (802.3ad) Trunk Configuration – Edge Devices**

(NOTE: For NetIron products please read the configuration manual for LAG commands)

```
Device(config)# interface ethernet 2/1
Device(config-if-e1000-2/1)# link-aggregate active
Device(config)# interface ethernet 2/2
Device(config-if-e1000-2/2)# link-aggregate active
```

**Display Dynamic Link Aggregation Configurations**

```
Device(config)# show link-aggregation
```

**Link Aggregation to Servers**

```
Device(config)# trunk server ethernet 4/7 to 4/8
Device(config)# trunk deploy     (This creates a 2 Gig connection to a Server)
```

**To Disable a Trunk Group**

(enter the Trunk’s primary interface, then disable that port. The entire trunk gets disabled this way.)
Device(config)# interface eth 1/1
Device(config)# disable

To Delete a Trunk Group

Device(config)# no trunk ethernet 1/1 to 1/2
Device(config)# no trunk ethernet 2/1 to 2/4 ethernet 4/5 to 4/8
Device(config)# trunk deploy

Configure Interface Speed and Duplex

Device(config)# interface ethernet 3/1 to 3/24 (Sets Duplex mode for Interfaces)
Device(config-mif-3/1-3/24)# speed-duplex ? (Options: 10-full/10-half/100-full/100-half/auto)

TFTP’ing Files To/From the Device

Device# copy tftp flash 192.168.10.249 Device-code-v7.5.04 primary
Device# copy startup-config tftp 192.168.10.249 RouterA_Backup_Config

Upgrading software on Edge devices

(Note: It is recommended that a Device be upgraded in the following manner: For NetIron and BigIron devices please see the appropriate release notes for detailed upgrade instructions)

1. Download new version of code to the Secondary flash area of the Device
   Device# copy tftp flash 192.168.10.249 Device-code-v7.5.04 secondary

2. Set the Device to boot from secondary flash upon next reload
   Device(config)# boot system flash secondary
   Device(config)# wr mem

3. Then reload the device and run on secondary flash for a week or so
   Device# reload

4. Once the new code is proven to be working fine, copy the secondary flash into primary
   Device# copy flash flash primary

5. remove the command for the box to boot up using the secondary flash code.
   Device(config)# no boot system flash secondary
   Device(config)# wr mem
Appendix A - CLI Line Editing Commands

Ctrl-Key Combination Description

Ctrl-A       Move to the first character on the command line.

Ctrl-B       Move the cursor back one character.

Ctrl-C       Escape and terminate command prompts and ongoing tasks (such as lengthy displays), and displays a fresh command prompt.

Ctrl-D       Delete the character at the cursor.

Ctrl-E       Move to the end of the current command line.

Ctrl-F       Move the cursor forward one character.

Ctrl-K       Delete all characters from the cursor to the end of the command line.

Ctrl-R/L     Repeat the current command line on a new line.

Ctrl-N       Enter the next command line in the history buffer.

Ctrl-P       Enter the previous command line in the history buffer.

Ctrl-X/U     Delete all characters from the cursor to the beginning of the command line.

Ctrl-W       Delete the last word you typed.

Ctrl-Z       Move from any CONFIG level of the CLI to the Privileged EXEC level; at the Privileged EXEC level, moves to the User EXEC level.
Special Characters for Regular Expressions

Character Operation

. The period matches on any single character, including a blank space.
For example, the following regular expression matches “aaz”, “abz”, “acz”, and so on, but not just “az”: a.z

* The asterisk matches on zero or more sequential instances of a pattern.
For example, the following regular expression matches output that contains the string “abc”, followed by zero or more Xs: abcX*

+ The plus sign matches on one or more sequential instances of a pattern.
For example, the following regular expression matches output that contains "de", followed by a sequence of “g”s, such as “deg”, “degg”, “deggg”, and so on: deg+

? The question mark matches on zero occurrences or one occurrence of a pattern.
For example, the following regular expression matches output that contains "dg" or "deg": de?g

Note: Normally when you type a question mark, the CLI lists the commands or options at that CLI level that begin with the character or string you entered. However, if you enter Ctrl-V and then type a question mark, the question mark is inserted into the command line, allowing you to use it as part of a regular expression.

^ A caret (when not used within brackets) matches on the beginning of an input string.
For example, the following regular expression matches output that begins with “deg”: ^deg

$ A dollar sign matches on the end of an input string.
For example, the following regular expression matches output that ends with “deg”: deg$

_ An underscore matches on one or more of the following:
- , (comma)
- { (left curly brace)
- } (right curly brace)
- ( (left parenthesis)
- ) (right parenthesis)
- The beginning of the input string
- The end of the input string
- A blank space
For example, the following regular expression matches on “100” but not on “1002”, “2100”, and so on: _100_

[ ] Square brackets enclose a range of single-character patterns.
For example, the following regular expression matches output that contains “1”, “2”, “3”, “4”, or “5”: [1-5]

You can use the following expression symbols within the brackets. These symbols are allowed only inside the brackets.

- ^ – The caret matches on any characters except the ones in the brackets. For example, the following regular expression matches output that does not contain “1”, “2”, “3”, “4”, or “5”:[^1-5]

- - The hyphen separates the beginning and ending of a range of characters. A match occurs if any of the characters within the range is present. See the example above.

Character Operation

\ A vertical bar separates two alternative values or sets of values. The output can match one or the other value. For example, the following regular expression matches output that contains either “abc” or “defg”: abcldefg

() Parentheses allow you to create complex expressions.
For example, the following complex expression matches on “abc”, “abcabc”, or “defg”, but not on “abcdefgdefg”: ((abc)+)((defg)?)
APPENDIX B - Basic Hardening of a Brocade Device

- Turn off undesired services
  - disable telnet (config)#no telnet server
    (DONOT ATTEMPT IF YOU ARE USING TELNET TO CONFIGURE DEVICE)
  - disable snmp (config)#no snmp-server
  - disable web management (config)#no web-management enable
  - enable route-only (int-3/1)#route-only
  - disable source routing (config)#no ip source-route
  - remove ICMP issues (config)#no ip directed-broadcast
  - disable proxy arp (config)#no ip proxy-arp

- Configure warning banners
  - MOTD (config)#banner motd "THIS IS MY MESSAGE"
  - Login (config)#banner incoming "THIS IS MY MESSAGE"
  - EXEC (config)#banner exec "THIS IS MY MESSAGE"

- Configure access methods
  - enable password (config)#enable super-user-password my_password
  - usernames (config)#username my_username password my_password
  - AAA (config)#aaa authentication login default local enable
  - Radius
  - SSH (config)#crypto key generate

- Configure time
  - #clock set hh:mm:ss mm-dd-yy

- Configure logging
  - config)#logging host a.b.c.d

- Configure port security
  - int-3/1)# port security
    port-sec-3/1)#enable

- Configure ACLs
  - management access (config)#access-list 1 permit host my_management_host
  - management traffic control (config)#snmp-server community private rw 1
### APPENDIX – C Cisco Command Cross Reference

<table>
<thead>
<tr>
<th>CISCO SYNTAX</th>
<th>BROCADE SYNTAX</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Router&gt; enable</td>
<td>Router&gt; enable</td>
<td>Enter privileged exec mode</td>
</tr>
<tr>
<td>Router# conf t</td>
<td>Router# conf t</td>
<td>Global configuration level</td>
</tr>
<tr>
<td>Router# show</td>
<td>Router(conf)# show</td>
<td>Show command from any level of the CLI</td>
</tr>
<tr>
<td>Router# clock set hh:mm:ss</td>
<td>Router# clock set hh:mm:ss</td>
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<tr>
<td>Router# exit</td>
<td>Router# exit</td>
<td></td>
</tr>
<tr>
<td>Router# disable</td>
<td>Router# end</td>
<td>Exit privileged mode</td>
</tr>
<tr>
<td>Router# sh ver</td>
<td>Router# sh ver</td>
<td></td>
</tr>
<tr>
<td>Router# sh flash</td>
<td>Router# sh flash</td>
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</tr>
<tr>
<td>Router# sh users</td>
<td>Router# sh who</td>
<td></td>
</tr>
<tr>
<td>Router# copy run start</td>
<td>Router(config)# write mem</td>
<td>Save configuration from any level of CLI</td>
</tr>
<tr>
<td>Router# erase start</td>
<td>Router# erase start</td>
<td></td>
</tr>
<tr>
<td>Router# sh start</td>
<td>Router# sh config</td>
<td></td>
</tr>
<tr>
<td>Router(config)# hostname</td>
<td>Router(config)# hostname</td>
<td>Set hostname</td>
</tr>
<tr>
<td>Router(config)# enable secret pass test</td>
<td>Router(config)# enable pass test</td>
<td>Brocade passwords encrypted by default</td>
</tr>
<tr>
<td>Router(config)# sh interface</td>
<td>Router(config)# sh interface</td>
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<tr>
<td>Router(config)# sh ip interface brief</td>
<td>Router(config)# sh ip interface</td>
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<tr>
<td>Router(config)# int e0</td>
<td>Router(config)# int e1</td>
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</tr>
<tr>
<td>Router(config-int)#</td>
<td>Router(config-int-e1)#</td>
<td></td>
</tr>
<tr>
<td>Router(config-int)# description link to router</td>
<td>Router(config-int-e1)# port-name link to router</td>
<td>Brocade supports both classful and CIDR mask</td>
</tr>
<tr>
<td>Router(config-int)# ip address 10.1.2.3 255.255.255.0</td>
<td>Router(config-int-e1)# ip address 10.1.2.3/24</td>
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<tr>
<td>Router(config-int)# no shut</td>
<td>Router(config-int-e1)# enable</td>
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<tr>
<td>Router(config)# cdp run</td>
<td>Router(config)# fdp run</td>
<td>Brocade supports both FDP and CDP</td>
</tr>
<tr>
<td>Router# sh cdp neighbor</td>
<td>Router(config)# sh fdp neighbor</td>
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</tr>
<tr>
<td>Router# reload</td>
<td>Router# reload</td>
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</table>
## Sample Edge Device Configuration

<table>
<thead>
<tr>
<th>CISCO SYNTAX</th>
<th>BROCADE SYNTAX</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conf t</td>
<td>Conf t</td>
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<tr>
<td>Hostname &lt;<em><strong>-swg-</strong></em>-xxx&gt;</td>
<td>Hostname &lt;<em><strong>-swg-</strong></em>-xxx&gt;</td>
<td>Configure hostname</td>
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<td>end</td>
<td>end</td>
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<tr>
<td>Conf t</td>
<td>Conf t</td>
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<tr>
<td>Interface vlan &lt;sss&gt;</td>
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<tr>
<td>Ip address &lt;150.sss.30.___&gt;&lt;255.255.240.0&gt;</td>
<td>Ip address &lt;150.sss.30.___&gt;&lt;255.255.240.0&gt;</td>
<td>Configure mgmt ip address</td>
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<td>end</td>
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<tr>
<td>Conf t</td>
<td>Conf t</td>
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<tr>
<td>Interface range GigabitEthernet &lt;d/0/1-ccc&gt;</td>
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<td>Configure all interfaces</td>
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<tr>
<td>Switchport access vlan &lt;sss&gt;</td>
<td>Vlan &lt;sss&gt;</td>
<td>Add vlan to interfaces</td>
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<tr>
<td>Switchport mode access</td>
<td>Untag eth 1 to &lt;ccc-1&gt;</td>
<td>Configure access mode</td>
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<tr>
<td>Spanning-tree portfast</td>
<td>---- (enabled by default)</td>
<td>Configure proprietary stp</td>
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<tr>
<td>Spanning-tree bpduguard enable</td>
<td>Int eth 1 to &lt;ccc-1&gt;&lt;cr&gt;stp-bpduguard&lt;cr&gt;</td>
<td>Configure bpduguard</td>
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<tr>
<td>No cdp enable</td>
<td>---- (disabled by default)</td>
<td>Disable cdp</td>
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<tr>
<td>No shutdown</td>
<td>---- (interfaces enabled by default)</td>
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<tr>
<td>end</td>
<td>end</td>
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<td>Conf t</td>
<td>Conf t</td>
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<tr>
<td>Interface GigabitEthernet &lt;d/0/ccc&gt;</td>
<td></td>
<td>Configure high order port as uplink</td>
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<td>shutdown</td>
<td>Vlan &lt;sss&gt;</td>
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<td>Switchport trunk encapsulation dot1q</td>
<td>Tag eth &lt;ccc&gt;</td>
<td>Enable IEEE 802.1q</td>
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<td>Switchport mode trunk</td>
<td>----</td>
<td>configure tagging mode</td>
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<td>Switchport trunk allow vlan &lt;sss&gt;</td>
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<td>Configure allowed vlan</td>
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<td>No shutdown</td>
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<td>end</td>
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<td>Conf t</td>
<td>Conf t</td>
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<td>Ip default-gateway &lt;150.sss.30.250&gt;</td>
<td>Ip default-gateway &lt;150.sss.30.250&gt;</td>
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<td>end</td>
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<td>Conf t</td>
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<td>Banner login L</td>
<td>Banner login L</td>
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<td><strong><strong>enter banner here</strong></strong></td>
<td><strong><strong>enter banner here</strong></strong></td>
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<td>end</td>
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<td>Conf t</td>
<td>Conf t</td>
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<td>Snmp-server community &lt;asciistring&gt;</td>
<td>Snmp-server community &lt;asciistring&gt;</td>
<td>ro</td>
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<td>Snmp-server community &lt;asciistring&gt;</td>
<td>Snmp-server community &lt;asciistring&gt;</td>
<td>rw</td>
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<td>Snmp-server community &lt;asciistring&gt;</td>
<td>rw</td>
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<tr>
<td>Snmp-server enable traps</td>
<td>---- (enabled by default)</td>
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<tr>
<td>Snmp-server host &lt;ipaddr&gt;</td>
<td>Snmp-server host &lt;ipaddr&gt;</td>
<td>&lt;string&gt;</td>
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<tr>
<td>Command</td>
<td>Description</td>
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<tr>
<td>Snmp-server host &lt;ipaddr&gt; envmon</td>
<td>(all traps sent to one or multiple hosts)</td>
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<tr>
<td>Logging &lt;ipaddr&gt;</td>
<td>Logging &lt;ipaddr&gt;</td>
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<td>end</td>
<td>end</td>
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<tr>
<td>Conf t</td>
<td>Conf t</td>
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<tr>
<td>Ip domain-name &lt;xxx.hqs.gov&gt;</td>
<td>Ip dns domain-name &lt;xxx.hqs.gov&gt;</td>
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<tr>
<td>Crypto key generate rsa 2048</td>
<td>Crypto key generate (DSA with default 1024)</td>
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<td>end</td>
<td>end</td>
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<td>Conf t</td>
<td>Conf t</td>
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<tr>
<td>Enable secret &lt;enable&gt;</td>
<td>Enable super-user-password &lt;enable&gt;</td>
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<tr>
<td>Configure encrypted secret pwd</td>
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<tr>
<td>Service password-encryption</td>
<td>---- (enabled by default)</td>
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<tr>
<td>Turn on pwd encryption</td>
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<td>Line console 0</td>
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<td>Enter line configuration mode</td>
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<td>Password &lt;enable&gt;</td>
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<td>Set console pwd to enable</td>
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<tr>
<td>login</td>
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<tr>
<td>User must login to console</td>
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<td>Exec-timeout 5 0</td>
<td>Console timeout 5</td>
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<td>Console timeout value</td>
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<td>Line vty 0 4</td>
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<td>Password &lt;enable&gt;</td>
<td>Enable telnet password &lt;enable&gt;</td>
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<td>login</td>
<td>Enable telnet authentication</td>
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<td>Exec-timeout 5 0</td>
<td>telnet timeout 5</td>
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<tr>
<td>Transport input telnet ssh</td>
<td>Ip ssh timeout 120</td>
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</tr>
<tr>
<td>Line vty 5 15</td>
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<td></td>
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<tr>
<td>Password &lt;enable&gt;</td>
<td>----</td>
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<tr>
<td>login</td>
<td>----</td>
<td></td>
</tr>
<tr>
<td>Exec-timeout 5 0</td>
<td>----</td>
<td></td>
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<tr>
<td>Transport input telnet ssh</td>
<td>----</td>
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<td>end</td>
<td>end</td>
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<tr>
<td>Conf t</td>
<td>Conf t</td>
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<tr>
<td>Ntp server &lt;150.sss.30.250&gt; prefer</td>
<td>Sntp server &lt;150.sss.30.250&gt;</td>
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<tr>
<td>Clock timezone GMT 0</td>
<td>Clock timezone gmt+0</td>
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<tr>
<td>Service timestamps debug datet ime msec</td>
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<td></td>
</tr>
<tr>
<td>Service timestamps log database msec</td>
<td>----</td>
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<tr>
<td>Logging buffered 4096 informational</td>
<td>Logging buffered 100 informational</td>
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<td>Logging console informational</td>
<td>Logging console</td>
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</tr>
<tr>
<td>No ip domain-lookup</td>
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<tr>
<td>No ip http server</td>
<td>No web-management http</td>
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</tr>
<tr>
<td>No snmp-server system-shutdown</td>
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<td>Privilege exec level 3 erase</td>
<td>Privilege exec level 4 erase</td>
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</tr>
<tr>
<td>Ip classless</td>
<td>---- (default configuration)</td>
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<tr>
<td>Errdisable recovery cause psecure-violation</td>
<td>Errdisable recovery cause all</td>
<td></td>
</tr>
<tr>
<td>Errdisable recovery interval 30</td>
<td>Errdisable recovery interval 30</td>
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<tr>
<td>Conf t</td>
<td>Conf t</td>
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<tr>
<td>Username &lt;fielduser&gt; privilege 3 &lt;password&gt;</td>
<td>Username &lt;fielduser&gt; privilege 4 &lt;password&gt;</td>
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<tr>
<td>end</td>
<td>end</td>
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<tr>
<td>Conf t</td>
<td>Conf t</td>
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<td>Tacacs-server host &lt;ipaddr&gt;</td>
<td>Tacacs-server host &lt;ipaddr&gt;</td>
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<td>Tacacs-server host &lt;ipaddr&gt;</td>
<td>Tacacs-server host &lt;ipaddr&gt;</td>
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<td>Tacacs-server key &lt;asciikey&gt;</td>
<td>Tacacs-server key &lt;asciikey&gt;</td>
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<tr>
<td>Command</td>
<td>Description</td>
<td></td>
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<td>conf t</td>
<td></td>
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<tr>
<td>Aaa new-model</td>
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<tr>
<td>Aaa authentication login default group tacacs+ local</td>
<td>Aaa authentication login default tacacs+ local</td>
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<tr>
<td>Aaa authorization console</td>
<td>Enable aaa console</td>
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<tr>
<td>Aaa authorization exec default group tacacs+ local</td>
<td>Aaa authorization exec default tacacs+ local</td>
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<tr>
<td>Aaa authorization commands 1 default group tacacs+ local</td>
<td>Aaa authorization commands 0 default tacacs+ none</td>
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<td>Aaa authorization commands 3 default group tacacs+ local</td>
<td>Aaa authorization commands 3 default tacacs+</td>
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<tr>
<td>Aaa authorization commands 15 default group tacacs+ local</td>
<td>Aaa authorization commands 15 default tacacs+</td>
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<tr>
<td>Aaa authorization config-commands</td>
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<td>end</td>
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</table>

Conf t
Aaa accounting exec default start-stop group tacacs+
Aaa accounting commands 1 default start-stop group tacacs+
Aaa accounting commands 3 default start-stop group tacacs+
Aaa accounting commands 15 default start-stop group tacacs+
Aaa accounting connection default start-stop group tacacs+
Aaa accounting system default start-stop tacacs+

This configures accounting for all commands >

Additional Notes:

A Cisco trunk port is equivalent to a Brocade tagged port.
A Cisco access port is equivalent to a Brocade untagged port.
A Cisco channel is equivalent to a Brocade trunk/LAG
Cisco defines VLAN membership under each interface.
Brocade defines VLAN membership globally.

NOTES SECTION: