Reboot	
Purpose	Used to restart the Switch.
Syntax	**reboot**
Description	This command is used to restart the Switch.
Parameters	None.
Restrictions	None.

Example usage:

To restart the Switch:

```
DES-3026:4#reboot
Command: reboot
Are you sure want to proceed with the system reboot? (y/n)
```

reset	
Purpose	Used to reset the Switch to the factory default settings.
Syntax	**reset {[config | system]}**
Description	This command is used to restore the Switch's configuration to the default settings assigned from the factory.
Parameters	*config* – If the keyword 'config' is specified, all of the factory default settings are restored on the Switch including the IP address, user accounts, and the Switch history log. The Switch will not save or reboot. *system* – If the keyword 'system' is specified all of the factory default settings are restored on the Switch. The Switch will save and reboot after the settings are changed to default. Rebooting will clear all entries in the Forwarding Data Base. If no parameter is specified, the Switch's current IP address, user accounts, and the Switch history log are not changed. All other parameters are restored to the factory default settings. The Switch will not save or reboot.
Restrictions	Only administrator-level users can issue this command.

Example usage:

To restore all of the Switch's parameters to their default values:

```
DES-3026:4#reset config
Command: reset config

Success.

Are you sure you want to proceed with system rest?(y/n)y

Success.

DES-3026:4#
```

login	
Purpose	Used to log in a user to the Switch's console.
Syntax	**login**
Description	This command is used to initiate the login procedure. The user will be prompted for his Username and Password.
Parameters	None.
Restrictions	None.

Example usage:

To initiate the login procedure:

```
DES-3026:4#login
Command: login

UserName:
```

logout	
Purpose	Used to log out a user from the Switch's console.
Syntax	**logout**
Description	This command terminates the current user's session on the Switch's console.
Parameters	None.
Restrictions	None.

Example usage:

To terminate the current user's console session:

```
DES-3026:4#logout
```

ping	
Purpose	Used to test the connectivity between network devices.
Syntax	**ping <ipaddr> {times <value 1-255>} {timeout <sec 1-99>}**
Description	The ping command sends Internet Control Message Protocol (ICMP) echo messages to a remote IP address. The remote IP address will then "echo" or return the message. This is used to confirm connectivity between the Switch and the remote device.
Parameters	*<ipaddr>* - Specifies the IP address of the host. *times <value 1-255>* - The number of individual ICMP echo messages to be sent. The maximum value is 255. The default is 0. *timeout <sec 1-99>* - Defines the time-out period while waiting for a response from the remote device. A value of 1 to 99 seconds can be specified. The default is 1 second.

ping	
	Pinging an IP address without the *times* parameter will ping the target device an infinite amount of times.
Restrictions	Only administrator-level users can issue this command.

Example usage:

To ping the IP address 10.48.74.121 four times:

```
DES-3026:4#ping 10.48.74.121 times 4

Command: ping 10.48.74.121


Reply from 10.48.74.121, time<10ms
Reply from 10.48.74.121, time<10ms
Reply from 10.48.74.121, time<10ms
Reply from 10.48.74.121, time<10ms

Ping statistics for 10.48.74.121
Packets: Sent =4, Received =4, Lost =0


DES-3026:4#
```

10

SPANNING TREE COMMANDS

The Switch supports 802.1d STP and 802.1w Rapid STP. The spanning tree commands in the Command Line Interface (CLI) are listed (along with the appropriate parameters) in the following table.

Command	Parameters
config stp	{maxage <value 6-40> | hellotime <value 1-10> | forwarddelay <value 4-30> | priority <value 0-61440> | version [rstp | stp] | txholdcount <value 1-10> | fbpdu [enabled | disabled] | lbd [enabled | disabled] | lbd_recover_timer [0 | <sec 60-1000000]}
config stp ports	<portlist> {cost [auto | <value 1-200000000>] | priority <value 0-240> | migrate [yes | no] | edge [true | false] | p2p [true | false | auto] | state [enabled | disabled] | lbd [enabled | disabled] | fbpdu [enabled | disabled] }
enable stp	
disable stp	
show stp	
show stp ports	{<portlist>}

Each command is listed, in detail, in the following sections.

config stp	
Purpose	Used to setup STP and RSTP on the Switch.
Syntax	**config stp {maxage <value 6-40> | hellotime <value 1-10> | forwarddelay <value 4-30> | priority <value 0-61440> | version [rstp | stp] | txholdcount <value 1-10> | fbpdu [enabled | disabled] | lbd [enabled | disabled] | lbd_recover_timer [0 | <sec 60-1000000]}**
Description	This command is used to setup the Spanning Tree Protocol (STP) for the entire switch.
Parameters	*maxage <value 6-40>* – The maximum amount of time (in seconds) that the Switch will wait to receive a BPDU packet before reconfiguring STP. The default is 20 seconds. *hellotime <value 1-10>* – The time interval between transmission of configuration messages by the root device. The default is 2 seconds. *forwarddelay <value 4-30>* – The maximum amount of time (in seconds) that the root device will wait before changing states. The default is 15 seconds. *priority <value 0-61440>* – A numerical value between 0 and 61440 that is used in determining the root device, root port, and designated port. The device with the highest priority becomes the root device. The lower the numerical value, the higher the priority. The default is 32,768. *version [rstp | stp]* - Select the Spanning Tree Protocol version used for the Switch. For IEEE 802.1d STP select *stp*. Select *rstp* for IEEE 802.1w Rapid STP. *txholdcount <value 1-10>* - The maximum number of Hello packets transmitted per interval. Default value = 3. *fbpdu [enabled | disabled]* – Allows the forwarding of STP BPDU packets from other network devices when STP is disabled on the Switch. The default is enabled. *lbd [enable | disable]* – Enabling this feature temporarily block STP on the Switch when a BPDU packet has been looped back to the switch. When the Switch detects its own BPDU packet coming back, it signifies a loop on the network. STP will automatically be blocked and an alert will be sent to the administrator. The LBD STP port will restart (change to discarding state) when the **LBD Recover Time** times out. The default is enabled. *lbd_recover_timer [0 | <value 60-1000000>]* - This field will set the time the STP port will wait before recovering the STP state set. 0 will denote that the LBD will never time out or restart until the administrator personally changes it. The user may also set a time between 60 and 1000000 seconds. The default is 60 seconds.
Restrictions	Only administrator-level users can issue this command.

Example usage:

To configure STP with maxage 18 and hellotime 4:

```
DES-3026:4#config stp maxage 18 hellotime 4
Command: config stp maxage 18 hellotime 4

Success.

DES-3026:4#
```

config stp ports

Purpose	Used to setup STP on the port level.
Syntax	**config stp ports <portlist> {cost [auto | <value 1-200000000>] | priority <value 0-240> | migrate [yes | no] | edge [true | false] | p2p [true | false | auto] | state [enabled | disabled] | lbd [enabled | disabled]}**
Description	This command is used to create and configure STP for a group of ports.
Parameters	*<portlist>* – Specifies a port or range of ports to be configured. *cost* – This defines a metric that indicates the relative cost of forwarding packets to the specified port list. Port cost can be set automatically or as a metric value. The default value is *auto*. • *auto* – Setting this parameter for the external cost will automatically set the speed for forwarding packets to the specified port(s) in the list for optimal efficiency. Default port cost: 100Mbps port = 200000. Gigabit port = 20000. • *<value 1-200000000>* - Define a value between 1 and 200000000 to determine the external cost. The lower the number, the greater the probability the port will be chosen to forward packets. *priority <value 0-240>* – Port Priority can be from 0 to 240. The lower the number, the greater the probability the port will be chosen as the Root Port. Default = 128. *migrate [yes | no] – yes* will enable the port to migrate from 802.1d STP status to 802.1w RSTP status. RSTP can coexist with standard STP, however the benefits of RSTP are not realized on a port where an 802.1d network connects to an 802.1w enabled network. Migration should be enabled (*yes*) on ports connected to network stations or segments that will be upgraded to 802.1w RSTP on all or some portion of the segment. *edge [true | false] – true* designates the port as an edge port. Edge ports cannot create loops, however an edge port can lose edge port status if a topology change creates a potential for a loop. An edge port normally should not receive BPDU packets. If a BPDU packet is received it automatically loses edge port status. *false* indicates that the port does not have edge port status. *p2p [true | false | auto] – true* indicates a point-to-point (P2P) shared link. P2P ports are similar to edge ports however they are restricted in that a P2P port must operate in full-duplex. Like edge ports, P2P ports transition to a forwarding state rapidly thus benefiting from RSTP. A p2p value of false indicates that the port cannot have p2p status. *auto* allows the port to have p2p status whenever possible and operate as if the p2p status were *true*. If the port cannot maintain this status (for example if the port is forced to half-duplex operation) the p2p status changes to operate as if the p2p value were *false*. *state [enabled | disabled]* – Allows STP to be enabled or disabled for the ports specified in the port list. The default is disabled. *lbd [enable | disable]* - Used to enable or disable the loop-back detection function on the Switch for the ports configured above in the *config stp* command.
Restrictions	Only administrator-level users can issue this command.

Example usage:

To configure STP with path cost 19, priority 15, and state enabled for ports 1-5.

```
DES-3026:4#config stp ports 1-5 cost 19 priority 15 state enabled
Command: config stp ports 1-5 cost 19 priority 15 state enabled

Success.

DES-3026:4#
```

enable stp	
Purpose	Used to globally enable STP on the Switch.
Syntax	**enable stp**
Description	This command allows the Spanning Tree Protocol to be globally enabled on the Switch.
Parameters	None.
Restrictions	Only administrator-level users can issue this command.

Example usage:

To enable STP, globally, on the Switch:

```
DES-3026:4#enable stp
Command: enable stp

Success.

DES-3026:4#
```

disable stp	
Purpose	Used to globally disable STP on the Switch.
Syntax	**disable stp**
Description	This command allows the Spanning Tree Protocol to be globally disabled on the Switch.
Parameters	None.
Restrictions	Only administrator-level users can issue this command.

Example usage:

To disable STP on the Switch:

```
DES-3026:4#disable stp
Command: disable stp

Success.

DES-3026:4#
```

show stp	
Purpose	Used to display the Switch's current STP configuration.
Syntax	**show stp**
Description	This command displays the Switch's current STP configuration.
Parameters	None.
Restrictions	None.

Example usage:

To display the status of STP on the Switch:

Status 1: STP enabled with STP compatible version

```
DES-3026:4#show stp
Command: show stp

STP Status        : Enabled
Max Age           : 20
Hello Time        : 2
Forward Delay     : 15
Priority          : 32768
Default Path Cost : 802.1T
STP Version       : STP compatible
TX Hold Count     : 3
Forwarding BPDU   : Enabled
Loopback Detection: Disabled
LBD Recover Time  : 60

 Designated Root Bridge: 00-54-85-26-05-00
 Root Priority        : 4096
 Cost to Root         : 200004
 Root Port            : 19
 Last Topology Change  : 6sec
 Topology Changes Count: 37
 Protocol Specification: 3
 Max Age              : 20
 Hello Time           : 2
 Forward Delay        : 15
 Hold Time            : 3
CTRL+C ESC q Quit SPACE n Next Page p Previous Page r Refresh
```

Status 2 : STP disabled

```
Command: show stp

STP Status        : Disabled
Max Age           : 20
Hello Time        : 2
Forward Delay     : 15
Priority          : 32768
Default Path Cost : 802.1T
STP Version       : RSTP
TX Hold Count     : 3
Forwarding BPDU   : Enabled
Loopback Detection: Disabled
LBD Recover Time  : 60


DES-3026:4#
```

show stp ports	
Purpose	Used to display the Switch's current per-port group STP configuration.
Syntax	**show stp ports <portlist>**
Description	This command displays the Switch's current per-port group STP configuration.
Parameters	*<portlist>* – Specifies a port or range of ports to be configured.
Restrictions	None.

Example usage:

To display STP state of all ports, with STP enabled:

```
DES-3026:4#show stp ports
Command: show stp ports

STP Port Information
----------------------
Port Index      :  1
Connection      : Link Down
State           : Yes
Cost            : *2000000
Priority        : 128
LBD             : No
Edge            : No
P2P             : Yes
Status          : Disabled
Role            : Disabled
Forwarding BPDU   : Enabled




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```

show fdb	
Purpose	Used to display the current unicast MAC address forwarding database.
Syntax	**show fdb {port <port> | vlan <vlan_name 32> | mac_address <macaddr> | static | aging_time}**
Description	This command will display the current contents of the Switch's forwarding database.
Parameters	*port <port>* – The port number corresponding to the MAC destination address. The Switch will always forward traffic to the specified device through this port. *<vlan_name 32>* – The name of the VLAN on which the MAC address resides. *<macaddr>* – The MAC address by which the forwarding table will be viewed. *static* – Displays the static MAC address entries. *aging_time* – Displays the aging time for the MAC address forwarding database.
Restrictions	None.

To display the aging time:

```
DES-3026:4#show fdb aging_time
Command: show fdb aging_time

Unicast MAC Address Aging Time = 300

DES-3026:4#
```

Example usage:

To display unicast MAC address table:

```
DES-3026:4#show fdb
Command: show fdb

Unicast MAC Address Ageing Time = 300

VID   VLAN Name   MAC Address        Port   Type
----  ----------  -----------------  ------ ----------
1     default     00-00-39-34-66-9A  10     Dynamic
1     default     00-00-51-43-70-00  10     Dynamic
1     default     00-00-5E-00-01-01  10     Dynamic
1     default     00-00-74-60-72-2D  10     Dynamic
1     default     00-00-81-05-00-80  10     Dynamic
1     default     00-00-81-05-02-00  10     Dynamic
1     default     00-00-81-48-70-01  10     Dynamic
1     default     00-00-E2-4F-57-03  10     Dynamic
1     default     00-00-E2-61-53-18  10     Dynamic
1     default     00-00-E2-6B-BC-F6  10     Dynamic
1     default     00-00-E2-7F-6B-53  10     Dynamic
1     default     00-00-E2-82-7D-90  10     Dynamic
1     default     00-00-F8-7C-1C-29  10     Dynamic
1     default     00-01-02-03-04-00  CPU    Self
1     default     00-01-02-03-04-05  10     Dynamic
1     default     00-01-30-10-2C-C7  10     Dynamic
1     default     00-01-30-FA-5F-00  10     Dynamic
1     default     00-02-3F-63-DD-68  10     Dynamic
CTRL+C ESC q Quit SPACE n Next Page ENTER Next Entry a All
```

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BASIC IP COMMANDS

The IP interface commands in the Command Line Interface (CLI) are listed (along with the appropriate parameters) in the following table.

Command	Parameters
config ipif	[System] [{ipaddress <network_address> | vlan <vlan_name 32> | state [enable | disable]} | bootp | dhcp]
show ipif	

Each command is listed, in detail, in the following sections.

config ipif	
Purpose	Used to configure the System IP interface.
Syntax	**config ipif [System] [{ipaddress <network_address> | vlan <vlan_name 32> | state [enable | disable]} | bootp | dhcp]**
Description	This command is used to configure the System IP interface on the Switch.
Parameters	*System* - The IP interface name to be configured. The default IP Interface name on the Switch is "System". All IP interface configurations done will be executed through this interface name. <*network_address*> – IP address and netmask of the IP interface to be created. The address and mask information may be specified by using the traditional format (for example, 10.1.2.3/255.0.0.0 or in CIDR format, 10.1.2.3/16). <*vlan_name 32*> – The name of the VLAN corresponding to the System IP interface. *state [enable* | *disable]* – Used to enable or disable the IP interface. *bootp* – Allows the selection of the BOOTP protocol for the assignment of an IP address to the Switch's System IP interface. *dhcp* – Allows the selection of the DHCP protocol for the assignment of an IP address to the Switch's System IP interface.
Restrictions	Only administrator-level users can issue this command.

Example usage:

To configure the IP interface System:

```
DES-3026:4#config ipif System ipaddress 10.48.74.122/8
Command: config ipif System ipaddress 10.48.74.122/8

Success.

DES-3026:4#
```

show ipif	
Purpose	Used to display the configuration of an IP interface on the Switch.
Syntax	**show ipif**
Description	This command will display the configuration of an IP interface on the Switch.
Parameters	None.
Restrictions	None.

Example usage:

To display IP interface settings.

```
DES-3026:4#show ipif
Command: show ipif

IP Interface Settings

Interface Name  : System
IP Address      : 10.48.74.122    (MANUAL)
Subnet Mask     : 255.0.0.0
VLAN Name       : default
Admin. State    : Disabled
Link Status     : Link UP
Member Ports    : 1-26

DES-3026:4#
```

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ROUTING TABLE COMMANDS

The routing table commands in the Command Line Interface (CLI) are listed (along with the appropriate parameters) in the following table.

Command	Parameters
create iproute	[default] <ipaddr> {<metric 1-65535>}
delete iproute	[default]
show iproute	{<network address>} {static}

Each command is listed, in detail, in the following sections.

create iproute

Purpose	Used to create IP route entries to the Switch's IP routing table.
Syntax	**create iproute [default] <ipaddr> {<metric 1-65535>}**
Description	This command is used to create a default static IP route entry to the Switch's IP routing table.
Parameters	*<ipaddr>* – The gateway IP address for the next hop router. *<metric 1-65535>* – Allows the entry of a routing protocol metric entry representing the number of routers between the Switch and the IP address above. The default setting is 1.
Restrictions	Only administrator-level users can issue this command.

Example Usage:

To add the default static address 10.48.74.121, with a metric setting of 1, to the routing table:

```
DES-3026:4#create iproute default 10.48.74.121 1
Command: create iproute default 10.48.74.121 1

Success.

DES-3026:4#
```

delete iproute default

Purpose	Used to delete a default IP route entry from the Switch's IP routing table.
Syntax	**delete iproute [default]**
Description	This command will delete an existing default entry from the Switch's IP routing table.
Parameters	None.
Restrictions	Only administrator-level users can issue this command.

Example usage:

To delete the default IP route 10.53.13.254:

```
DES-3026:4#delete iproute default 10.53.13.254
Command: delete iproute default 10.53.13.254

Success.

DES-3026:4#
```

show iproute

Purpose	Used to display the Switch's current IP routing table.
Syntax	**show iproute {<network address>} {static}**
Description	This command will display the Switch's current IP routing table.
Parameters	*network address* – IP address and netmask of the IP interface that is the destination of the route. The address and mask information may be specified by using the traditional format (for example, 10.1.2.3/255.0.0.0 or in CIDR format, 10.1.2.3/8). *static* - Use this parameter to display static iproute entries.
Restrictions	None.

Example Usage:

To display the contents of the IP routing table:

```
DES-3026:4#show iproute
Command: show iproute

Routing Table

IP Address/Netmask   Gateway          Interface       Hops   Protocol
---------------      ---------------  ---------------  ----  -----------
0.0.0.0              10.1.1.254       System           1     Default
10.0.0.0/8           10.48.74.122     System           1     Local

Total Entries: 2

DES-3026:4#
```