CLI Transition Guide for Dell™ PowerConnect™ 5500 Series Switches

A Dell Technical White Paper

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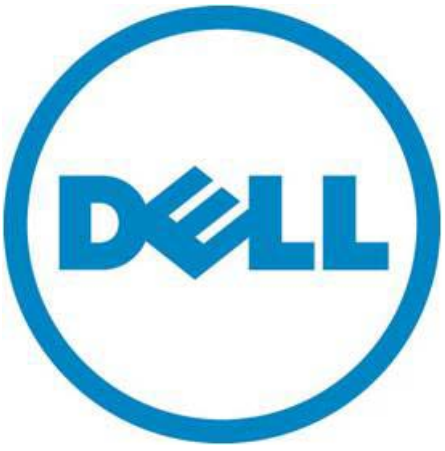

PC5524, PC5524P, PC5548, PC5548P

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Introduction

The Dell™ PowerConnect™ 5500 Series Systems CLI Transition Guide White Paper outlines the changes in the CLI commands from the PowerConnect 54XX and 35XX software to the 4.x software release on the 5500 Series switches. Changes include syntax and functional updates as specified in the following sections.

Changes to the Interface Naming Conventions

On the Dell PowerConnect 5500, the interface naming convention is the industry standard format of interface type (gigabitethernet or tengigabitethernet), unit ID, Slot number and port number. The user can also use the short form of the interface type (gi or te). For example, the name of first gigabitethernet port of unit ID 2 is: gi2/0/1 or gigabitethernet2/0/1.

VLAN Enhancements

The configuration of VLANs in this software release is much more flexible than previous releases:

Shadow VLAN Configuration

In previous products, the user could configure interface level VLAN commands only if they matched current port's VLAN mode. For example, if port is in access mode, user could not configure commands related to general mode.

On the Dell PowerConnect 5500, the user can configure any VLAN command, even if not related to the current port VLAN mode. Configuration of inactive VLAN modes are kept as "shadow configuration" until the relevant mode is applied. The user can view shadow and active configurations via the "show interface switchport" command.

Adding a port which is a VLAN member to a LAG

In previous products, the user could not add a port to a LAG if the port was a member in any VLAN besides the default VLAN.

On the Dell PowerConnect 5500, the user can add a port to a LAG even if it is a member of one or more VLANs. The VLAN configuration on the port becomes inactive until the port is removed from LAG, since the Port acquires the VLAN configuration of the LAG. The user can view this information via the "show interface switchport" command.

Configuring IP Address on a port which is a member of VLANs

In previous products, the user could configure an IP Address on a port only if the port was not a member of any VLAN besides the default VLAN. IP configuration would become active immediately after command execution.

On the Dell PowerConnect 5500, the user can define an IP Address on a port even if it is a member of one or more VLANs. To activate IP Interface on a port, the user must apply the CLI command "no switchport", which enables L3 capabilities on a port. The user can view this information via "show interface switchport" command.

Enhanced functionality in Trunk mode

On the Dell PowerConnect 5500, ports set to Trunk mode now carries all VLANs (by default) that are created and active on the device, and an inactive member of VLANs that were not created. The port PVID (native VLAN) can be configured to a VLAN that does not exist on the device. Untagged frames will be classified to the VLAN whose VID is configured as the port's PVID. Frames to all other VLANs active on the port will be sent tagged.

Enhancement to IGMP Snooping

IGMP Snooping configuration was modified to an industry standard configuration, which includes: robustness, query-interval, query-max-response-time, last-member-query-count and last-member-query-interval. In the Dell PowerConnect 5500, the IGMP Snooping timers are automatically exported from the received queries and the user does not need to configure them manually.

Additional ACL Options

The enhancement to ACLs includes support for time-based ACLs, and support for logging information on packets dropped due to deny rules. On the Dell PowerConnect 5500, the user can configure IPv6 rules, in addition to the IPv4 rules and MAC rules.

Modification in Power-Over-Ethernet

In previous products, the power limit was based on the Class Mode of the powered device.

On the Dell PowerConnect 5500, the user has control of the allocated power per port.

Enhancement to Stack Configuration

On the Dell PowerConnect 5500, configuring the stack unit numbers is more intuitive and the automatic numbering feature for each unit is enabled by default.

Enhancement to QoS Ingress Rate Limit

On the Dell PowerConnect 5500, the ingress rate limit is based on the Policer mechanism, which makes it much more accurate than in the previous products, and also makes it possible to use ingress rate limit and storm control on a the same port.

Updated Commands – Operational Modifications

Table 1 shows the list of commands with updated syntax for normal switch operation.

Table 1. Updated Commands with Operational Modifications

Feature	Previous Implementation	Dell PowerConnect 5500 Implementation	Comments
ACL	{deny | permit } {any| protocol} {any | source source-wildcard} {any|{destination destination-wildcard}} [dscp number | ip-precedence number]	{deny | permit } {ip | protocol } {any | source source-wildcard} {any | destination destination-wildcard} [dscp number | precedence number] [time-range time-range-name]	1. The command syntax was modified 2. See also description in previous chapter.
Address Table	clear bridge clear mac-addresses {ethernet interface | port-channel port-channel-number}	clear mac address-table dynamic [interface interface-id]	The command syntax was modified. The revised command aggregates two commands in the former implementation
IGMP Snooping	ip igmp snooping host-time-out ip igmp snooping mrouter-time-out ip igmp snooping leave-time-out	ip igmp robustness ip igmp query-interval ip igmp query-max-response-time ip igmp last-member-query-count ip igmp last-member-query-interval	1. See description in previous chapter. 2. The transformation to the new implementation is as follows under the “interface VLAN” configuration: RouterTimeOut = Robustness * QueryInterval HostTimeOut = RouterTimeOut + QueryMaxResponseTime LeaveTimeOut = LastMemberQueryCount * LastMemberQueryInterval
Interface Configuration	interface ethernet interface interface range ethernet { port-range | all } interface port-channel port-channel-number	interface interface-id interface {port-range-list | all}	1. The command syntax was modified 2. See also description in previous chapter.

Feature	Previous Implementation	Dell PowerConnect 5500 Implementation	Comments
ARP	arp timeout seconds	arp timeout seconds	In the revised implementation, the command is supported in both Global Configuration Mode and Interface Configuration Mode, while previous implementation supported only Global Configuration Mode.
VLAN	vlan vlan-id name	vlan vlan-id [media ethernet] [name vlan-name] [state active] [stp type ieee]	1. In the revised implementation, the command is also used for assigning a name to a VLAN. 2. Optional parameters were added (entering them has no effect)
VLAN	switchport trunk allowed vlan {add vlan-list | remove vlan-list}	switchport trunk allowed vlan { all | none | add vlan-list | remove vlan-list | except vlan-list }	1. The command syntax was modified 2. See also description in previous chapter.

Updated Commands – Command Mode Modifications

Table 2 shows the list of commands with updated syntax for command mode switch operation.

Table 2. Updated Commands with Command Mode Modifications

Feature	Previous Implementation	Dell PowerConnect 5500 Implementation	Comments
IGMP Snooping	ip igmp snooping	ip igmp snooping vlan vlan-id	In Dell PowerConnect 5500, the command was modified from VLAN Interface Configuration Mode command to Global Configuration Mode command that includes the VLAN ID as a parameter
IGMP Snooping	ip igmp snooping mrouter learn-pim-dvmrp	ip igmp snooping vlan vlan-id mrouter learn pim-dvmrp	1. In Dell PowerConnect 5500, the command was modified from VLAN Interface Configuration Mode command to Global Configuration Mode command that includes the VLAN ID as a parameter 2. The command syntax was modified
IGMP Snooping	ip igmp snooping mrouter ports {add | delete} {ethernet interface-list | port-channel port-channel-number-list}	ip igmp snooping vlan vlan-id mrouter interface interface-range-list no ip igmp snooping vlan vlan-id mrouter interface interface-range-list	1. In Dell PowerConnect 5500, the command was modified from VLAN Interface Configuration Mode command to Global Configuration Mode command that includes the VLAN ID as a parameter 2. The command syntax was modified
IGMP Snooping	ip igmp snooping vlan vlan-id immediate-leave	ip igmp snooping vlan vlan-id immediate-leave	In Dell PowerConnect 5500, the command was modified from VLAN Interface Configuration Mode command to Global Configuration Mode command that includes the VLAN ID as a parameter

Feature	Previous Implementation	Dell PowerConnect 5500 Implementation	Comments
IGMP Snooping	ip igmp snooping forbidden mrouter ports {add | delete} {ethernet interface-list | port-channel port-channel-number-list}	ip igmp snooping vlan vlan-id forbidden mrouter ports interface-range-list no ip igmp snooping vlan vlan-id forbidden mrouter ports [interface-range-list]	1. In Dell PowerConnect 5500, the command was modified from VLAN Interface Configuration Mode command to Global Configuration Mode command that includes the VLAN ID as a parameter 2. The command syntax was modified
IGMP Snooping	ip igmp snooping multicast-tv vlan vlan-id {add | remove} ip-multicast-address [count number]	ip igmp snooping vlan vlan-id multicast-tv ip-multicast-address [count number] no ip igmp snooping vlan vlan-id multicast-tv [ip-multicast-address [count number]]	1. In Dell PowerConnect 5500, the command was modified from VLAN Interface Configuration Mode command to Global Configuration Mode command that includes the VLAN ID as a parameter 2. The command syntax was modified
IGMP Snooping	ip igmp snooping querier enable	ip igmp snooping vlan vlan-id querier no ip igmp snooping vlan vlan-id querier	1. In Dell PowerConnect 5500, the command was modified from VLAN Interface Configuration Mode command to Global Configuration Mode command that includes the VLAN ID as a parameter 2. The command syntax was modified

Updated Commands – Syntax Modifications

Table 3 shows the list of commands with updated syntax modifications.

Table 3. Updated Commands with Syntax Modifications

Feature	Previous Implementation	Dell PowerConnect 5500 Implementation
802.1x	dot1x timeout re-authperiod seconds	dot1x timeout reauth-period seconds
802.1x	dot1x re-authentication	dot1x reauthentication
802.1x	dot1x multiple-hosts	dot1x host-mode {single-host | multi-host}
802.1x	dot1x single-host-violation {discard | forward | discard-shutdown}	dot1x violation-mode {protect | forward | shutdown}
AAA	enable password [level level] password [encrypted]	enable password [level level] [[password | {{0 | 7} encrypted-password}]
AAA	username name [password password] [level level] [encrypted]	username name [privilege level] [[password | {{0 | 7} encrypted-password}]
AAA	aaa accounting login {radius}	aaa accounting login start-stop group radius
AAA	aaa accounting dot1x {radius}	aaa accounting dot1x default start-stop group radius
ACL	ip access-list access-list-name	ip access-list extended name
ACL	mac access-list access-list-name	mac access-list extended name
Address Table	bridge aging-time seconds	mac address-table aging-time seconds
Clock commands	clock timezone hours minutes zone	clock timezone zone hours-offset [minutes-offset]

Feature	Previous Implementation	Dell PowerConnect 5500 Implementation
Clock commands	clock summer-time [usa|eu] recurring | date zone	clock summer-time zone recurring {usa | eu | {week day month hh:mm week day month hh:mm}} [offset] clock summer-time zone date date month year hh:mm date month year hh:mm [offset] clock summer-time zone date month date year hh:mm month date year hh:mm [offset]
Ethernet configuration	clear counters [ethernet interface | port-channel port-channel-number]	clear counters interface-id
Ethernet configuration	port storm-control broadcast rate rate	storm-control broadcast level bps rate
IP Addressing	renew dhcp {ethernet interface-number | vlan vlan-id | port-channel number}	renew dhcp interface-id
IP Addressing	arp ip_addr hw_addr {ethernet interface-number | vlan vlan-id | port-channel number}	arp ip-address hardware-address {interface-id}
IP Addressing	ip domain-name name	ip domain name name
IP Addressing	ipv6 address ipv6-address link-local	ipv6 address ipv6-address/prefix-length link-local
IP Addressing	ipv6 neighbor ipv6-addr hw-addr {ethernet interface-number | vlan vlan-id | port-channel number}	ipv6 neighbor ipv6-addr interface-type interface-number hw-addr
IP Addressing	tunnel source {auto | ip-address ipv4-address }	tunnel source {auto |ipv4-address }

Feature	Previous Implementation	Dell PowerConnect 5500 Implementation
Web server	ip http exec-timeout minutes [seconds]	ip http timeout-policy idle seconds
Web server	ip http authentication method1 [method2…]	ip http authentication aaa login-authentication method1 [method2…]
Web server	ip https port	ip http secure-port
Web server	ip https server	ip http secure-server
Port channel	port-channel load-balance {layer-2-3 | layer-2 | layer-3 | layer-2-3-4}	port-channel load-balance {src-dst-mac | src-dst-ip | src-dst-mac-ip | src-dst-mac-ip-port}
LLDP	lldp enable	lldp run
LLDP	lldp enable [rx | tx | both]	lldp transmit lldp receive
LLDP	lldp hold-multiplier number	lldp holdtime seconds
LLDP	lldp reinit-delay seconds	lldp reinit seconds
LLDP	clear lldp rx [ethernet interface]	clear lldp table [interface-id]
RMON	rmon collection history index [owner name | buckets bucket-number | interval interval]	rmon collection stats index [owner name | buckets bucket-number | interval interval]
SNMP	no snmp-server enable	no snmp-server
SNMP	snmp-server host { ipv4-address | ipv6-address| hostname} community-string [traps | informs] [1 | 2] [udp-port port] [filter filtername] [timeout seconds] [retries retries]	snmp-server host host-addr [informs | traps] [version {1 | 2c | 3 {auth | noauth | priv}] {community-string [notification-type]} [udp-port port] [filter filtername] [timeout seconds] [retries retries]

Feature	Previous Implementation	Dell PowerConnect 5500 Implementation
SNMP	snmp-server community community [ro | rw | su] [ipv4-address| ipv6-address] [view view-name] snmp-server community-group community group-name [ipv4-address| ipv6-address]	snmp-server community community [view view-name] [ro | rw | su] [ipv4 address | ipv6 address] [access-list-number]
SNMP	snmp-server user username groupname [remote engineid-string] [auth-md5 password | auth-sha password | auth-md5-key md5-des-keys | auth-sha-key sha-des-keys] no snmp-server user username [remote engineid-string]	snmp-server user username groupname [remote engineid-string] {v1 | v2c | v3 [encrypted] [auth {md5 | sha} auth-password]} no snmp-server user username [remote engineid-string]
SSH	user-key username {rsa | dsa} no user-key username	named-key key-name { encryption | signature }
Spanning Tree	spanning-tree mode { stp | rstp | mstp}	spanning-tree mode { stp | rstp | mst}
Spanning Tree	spanning-tree bpduguard	spanning-tree bpduguard {enable | disable} no spanning-tree bpduguard
Spanning Tree	clear spanning-tree detected-protocols [ethernet interface | port-channel port-channel-number]	clear spanning-tree detected-protocols [interface interface-id]
Spanning Tree	instance instance-id {add | remove} vlan vlan-range	instance instance-id vlan vlan-range no instance instance-id [vlan vlan-range]
Syslog	logging buffered size number	logging buffered [buffer-size] [severity-level]

Feature	Previous Implementation	Dell PowerConnect 5500 Implementation
Syslog	logging {ipv4-address | ipv6-address | hostname} [port port] [severity level] [facility facility] [description text]	logging host {ipv4-address | ipv6-address | hostname} [port port] [severity level] [facility facility] [description text]
System Management	ping ip-address | hostname [size packet_size] [count packet_count] [timeout time_out]	ping ip {ipv4-address | hostname} [size packet_size] [count packet_count] [timeout time_out]
System Management	traceroute {ip-address|hostname} [size packet_size] [ttl max-ttl] [count packet_count] [timeout time_out] [source ip-address] [tos tos]	traceroute ip {ipv4-addr | hostname} [size packet_size] [ttl max-ttl] [count packet_count] [timeout time_out] [source ip-address] [tos tos]
System Management	stack reload [unit]	reload [slot stack-member-number]
System Management	stack change unit-id unit-number to new-unit-number	switch current-stack-member-number renumber new-stack-member-number
802.1x	show dot1x [ethernet interface] show dot1x statistics ethernet interface	show dot1x [interface interface-id] show dot1x statistics interface interface-id
Address Table	show mac address-table [vlan vlan] [interface interface-id] [address mac-address]	show mac address-table dynamic [vlan vlan] [interface interface-id] [address mac-address]
Address Table	show mac address-table [vlan vlan] [interface interface-id] [address mac-address]	show mac address-table static [vlan vlan] [interface interface-id] [address mac-address]
Ethernet configuration	show ports storm-control [interface]	show storm-control [interface-id]

Feature	Previous Implementation	Dell PowerConnect 5500 Implementation
System Management	show power inline [ethernet interface-id] show power inline power-consumption [ethernet interface-id]	show power inline [[interface-id | consumption] | module switch-number]
System Management	show copper-ports tdr [interface]	show cable-diagnostics tdr interface interface-id
System Management	show stack [unit unit]	show switch [stack-member-number]
IGMP Snooping	ip igmp snooping forbidden mrouter ports {add | delete} {ethernet interface-list | port-channel port-channel-number-list}	ip igmp snooping vlan vlan-id forbidden mrouter ports interface-range-list no ip igmp snooping vlan vlan-id forbidden mrouter ports [interface-range-list]

Summary

For more information, consult the Dell PowerConnect 5500 CLI Guide available at http://support.Dell.com.