Bulk Content Downloader (BCDL) Commands

This module describes the **show** commands that you can use to see the status of the Bulk Content Downloader (BCDL) process. The BCDL provides the Cisco IOS XR software with high-performance downloading capabilities. This capability is used by the following internal applications:

- IPv4 and IPv6 unicast routing protocols—To provide the ability to download forwarding information from the router Global Routing Information Base (GRIB) to the line cards.
- IPv4 and IPv6 multicast routing protocols—To download the Multicast Routing Information Base (MRIB) entries to consumers managing the Multicast Forwarding Information Base (MFIB) on the various line cards.
- MPLS—To download the Label Forwarding Information Base (LFIB) entries to the line card.
- Fabric Management—To update memberships for individual fabric group IDs (FGIDs) to selected portions of the fabric hardware.
- CDS—Context Distribution Service.

There is no configuration necessary for the BCDL.

show bcdl

To display Bulk Content Downloader (BCDL) information, use **show bcdl** command in EXEC mode.

show bcdl [*group-name*]

Syntax Description

group-name	(Optional) Displays information for a specific BCDL group.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
sysmgr	read

The following example shows sample output from the **show bcdl** command:

```
Router#show bcdl ipv4_rib
Sun May 31 06:56:12.093 PST
grp ipv4_rib, gid 2040, sg cnt 1, agent jid 124, node 0/RSP0/CPU0, pulse 105,
new mbr 0
sg  lwg fd csmr hdlr-act dnld-act susp wait-lck seq pulse-tot pulse-out
 0 2043 11    4       no       no   no        0 113       103         0
```

Table 1: show bcdl Field Descriptions

Field	Description
group	Type of download and the Group Services Protocol (GSP) group name.
gid	Heavyweight group (HWG) in the GSP. This is the group that a consumer initially joins. It is used by the BCDL agent to send control updates.
sg count	Number of subgroups for this particular download type.
agent jid	Job identifier of the BCDL agent. The JID is numerical identifier for a particular process and remains the same across process restarts.
node	Node, expressed in the *rack/slot* notation, in which the agent is running.
pulse	Pulse code used by the producer to pulse the BCDL agent.
new mbr	Number of new consumers that have not yet been assigned a subgroup.

Field	Description
sg	Subgroups number.
lwg	Lightweight group in GSP. This is a type of child group of the HWG. The BCDL agent tells the consumers to join this group to receive data.
fd	The connection handle between the producer and the BCDL agent.
csmr	Number of consumers.
hdlr-act	Specifies if there is a download in progress.
dnld-act	Indicates whether the convergence flag has been sent or not.
susp	Indicates whether the download is suspended due to the queue filling up.
wait-lck	If nonzero, some thread is waiting for other thread to take control of this subgroup.
seq	Sequence number of the last message sent on this subgroup.
pulse-tot	Total number of pulses sent by the producer to the BCDL agent.
pulse-out	Total number of outstanding pulses that have not yet been processed by the BCDL agent.

show bcdl consumers

To display Bulk Content Downloader (BCDL) consumer information, use **show bcdl consumers** command in EXEC mode.

show bcdl consumers [*group_name*] [*detail*]

Syntax Description

group_name	(Optional) Displays information for a specific BCDL group.
detail	(Optional) Display detailed summary for BCDL consumer.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
sysmgr	read

The following example shows sample output using the **show bcdl consumers** command:

```
Router# show bcdl consumers ipv4_ribSun May 31 06:17:38.209 PST
group ipv4_rib, gsp gid 2040, 4 consumers, agent jid 124, node 0/RSP0/CPU0
(expected 4 consumers to reply, received 4 replies)
      pid       node asg csg  lwg sus  messages       bytes  errs name
   323727 0/RSP0/CPU0   0   0 2043   N       113       54196     0 fib_mgr
   110686   0/6/CPU0   0   0 2043   N       111       54140     0 fib_mgr
   110686   0/4/CPU0   0   0 2043   N       112       54168     0 fib_mgr
   110686   0/1/CPU0   0   0 2043   N       111       54140     0 fib_mgr
```

Table 2: show bcdl consumers Field Descriptions

Field	Description
PID	Process identifier.
node	Consumer node, expressed in the *rack/slot* notation.
asg	Subgroup to which the BCDL agent thinks this consumer belongs.
csg	Subgroup to which the consumer thinks it belongs.
messages	Number of messages processed by this particular consumer.
bytes	Bytes processed by this particular consumer.

Field	Description
errors	Errors encountered by the consumer. This field indicates the number of times the connection was reset.
name	Name of the consumer process.

show bcdl queues

To display Bulk Content Downloader (BCDL) queue information, use **show bcdl queues** command in EXEC mode.

show bcdl queues [*group_name*]

Syntax Description

group_name	(Optional) Displays information for a specific BCDL group.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
sysmgr	read

The following example shows sample output from the **show bcdl queues** command:

```
Router # show bcdl queues ipv4_ribSun May 31 07:13:28.665 PST
group ipv4_rib, gsp gid 2040, 4 consumers, agent jid 124, node 0/RSP0/CPU0
(expected 4 consumers to reply, received 4 replies)
      pid       node asg csg  lwg sus msgs_in_q  bytes_in_q  errs name
   323727 0/RSP0/CPU0   0   0 2043   N         0           0     0 fib_mgr
   110686   0/6/CPU0   0   0 2043   N         0           0     0 fib_mgr
   110686   0/1/CPU0   0   0 2043   N         0           0     0 fib_mgr
   110686   0/4/CPU0   0   0 2043   N         0           0     0 fib_mgr
```

show bcdl tables

To display Bulk Content Downloader (BCDL) table information, use **show bcdl tables** command in EXEC mode.

show bcdl tables [*group_name*]

Syntax Description

group_name	Displays information for a specific BCDL group.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
sysmgr	read

The following example shows sample output using the **show bcdl tables** command:

```
Router# show bcdl tables ipv4_rib
Sun May 31 07:19:29.878 PST
grp ipv4_rib, gid 2040, sg cnt 1, agent jid 124, node 0/RSP0/CPU0, pulse 105, ne
w mbr 0
  sg  lwg fd csmr hdlr-act dnld-act susp wait-lck   seq pulse-tot pulse-out
   0 2043 11    4       no       no   no        0   113       103         0
sgs: 1, table_cnt: 1, table_mid_cnt: 4, buf size: 100
Showing table info for 1 subgroups
 sg 0: has 1 tables (messages: 0, bytes: 0)
  table 0xe0000000: 4 members, dnld act: 0, messages: 113, bytes: 54196
   cnsmr 0: pid 323727 on node 0/RSP0/CPU0
   cnsmr 1: pid 110686 on node 0/6/CPU0
   cnsmr 2: pid 110686 on node 0/1/CPU0
   cnsmr 3: pid 110686 on node 0/4/CPU0
```

Table 3: show bcdl tables Field Descriptions

Field	Description
sgs	Number of subgroups.
table_cnt	Number of tables in this subgroup.
sg	Specific subgroup for which information is provided.
has 1 tables	Number of tables in this subgroup.

Field	Description
messages	Messages sent that are not associated with a particular table ID.
bytes	Bytes sent that are not associated with a particular table ID.
table	Specific table ID for which information is provided.
members	Number of consumers associated with this table.
dnld act	Indicates whether or not the convergence flag has been sent.
messages	Number of messages sent for a particular table.
bytes	Number of bytes sent for a particular table.
cnsmr 0: pid 419725 on node 0/RP0/CPU0	Process ID and node information for each consumer in the specified table.

show bcdl trace

To display Bulk Content Downloader (BCDL) trace information, use **show bcdl trace** command in EXEC mode.

show bcdl trace [*group_name*] [**event**] [**timing**] [**grpsnd**] [**wrapping** | **unique**] [**hexdump**] [**last** *n*] [**reverse**] [**stats**] [**tailf**] [**verbose**] [**file** *filename* **original location** *node-id* | **location** {*node-id* | **all**}]

Syntax Description

group_name	(Optional) Displays information for a specific BCDL group.
event	(Optional) Displays event trace entries.
timing	(Optional) Displays timing trace entries.
grpsnd	(Optional) Displays group send trace entries.
wrapping	(Optional) Displays wrapping entries.
unique	(Optional) Displays unique entries only, along with the count of the number of times this entry appears.
hexdump	(Optional) Displays traces in hexadecimal format.
last *n*	(Optional) Displays the last *n* number of traces only.
reverse	(Optional) Displays the most recent traces first.
stats	(Optional) Displays execution path statistics.
tailf	(Optional) Displays new traces as they are added.
verbose	(Optional) Displays additional internal debugging information.
file *filename* **original location** *node-id*	(Optional) Specifies a filename and original location of the file to display.
location {*node-id* | **all**}	Specifies the RP node for which to display the execution path monitoring information. The *node-id* argument is expressed in the *rack / slot*notation. The **all** keyword specifies all RP nodes.

Command Default

No default behavior or values.

Command Modes

EXEC

Command History

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
sysmgr	read

The following example shows sample output using the **show bcdl trace** command:

```
Router# show bcdl trace ipv4_rib location 0/1/cpu0
Sun May 31 08:21:07.933 PST
143 wrapping entries (4096 possible, 0 filtered, 143 total)
May 21 15:14:55.790 bcdl/c/ipv4_rib 0/1/CPU0 t4  LE
  bcdl_join_internal: timer_create ret 0, id is 9
May 21 15:14:56.890 bcdl/c/ipv4_rib 0/1/CPU0 t7  LE
  bcdl_join_internal: group_lookup bcdl_ipv4_rib
  returned gid 2040
May 21 15:14:56.966 bcdl/c/ipv4_rib 0/1/CPU0 t7  LE
  join hwg 2040 returns 0
May 21 15:14:56.978 bcdl/c/ipv4_rib 0/1/CPU0 t7  LE
  bcdl_join_internal: joined group bcdl_ipv4_rib,
  member count 5
May 21 15:14:58.969 bcdl/c/ipv4_rib 0/1/CPU0 t7  LE
  rcv gsp mtype 3: connection init sg 1 cur_seq 0
  lwg_gid 2056 table tag 0x00000000 resend state yes
May 21 15:14:58.969 bcdl/c/ipv4_rib 0/1/CPU0 t7  LE
  pc ring high water 0 -> 1, 0 bytes
May 21 15:14:58.969 bcdl/c/ipv4_rib 0/1/CPU0 t4  LE
  c_h deliver msg_id 7 connection init, table event
  0 table tag 0x00000000
May 21 15:14:58.969 bcdl/c/ipv4_rib 0/1/CPU0 t4  LE
  conn init, seq 64206 -> 0, sg 65534 -> 1, gid 2040,
  lwg gid -1 -> 2056
 ...
```