



CHAPTER 17

Extended Read Access Commands

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This chapter describes the Extended Read Access (ERAC) commands.



Note

In this chapter, an asterisk preceding a token name means the token is mandatory. A token without an asterisk is optional.

Accessibility, Resolution and Strategy

This section describes the accessibility, telephone number resolution and strategy options for the Extended Read Access Commands (ERAC).

Accessibility

These commands are accessible through the following Cisco BTS 10200 Softswitch adapters:

- CLI and MAINT shells
- CORBA/XML adapters
- EPOM (uses CORBA/XML)
- SPA

Read access is not permitted in the bulk provisioning adapter. Likewise, the Simple Network Management Protocol (SNMP) adapter does not allow management of provisioning data.

Telephone Number Resolution

The directory number (DN) or telephone number (TN) refers to the same entity in the Cisco BTS 10200 Softswitch. These terms may be used interchangeably in the context of this document. To provide a consistent view, the TN is pulled from the database in the EC and NDC field of the BTS 10200 Office Code table and the DN field from the DN2 Subscriber table. This is a concatenation of 14 (or less) digits. When a command requires a TN, this is the fully qualified TN format that must be supplied. Commands will fail if a partial TN is supplied.

Strategy

The basic strategy for implementation each of these commands is to provide a static implementation of a complex read against the database using prepared SQL statements. This optimization of SQL combined with complex multitable and nested SELECT(s) yield a fast composite of data that would otherwise require several dips to the database in addition to extended back end post processing of the data.

Commands

This section describes the standard commands that provide specific data views into the Cisco BTS 10200 Softswitch.

Command List

Standard commands utilize the facilities of the Cisco BTS 10200 Softswitch with respect to the infrastructure. They utilize the same resources that exist for even the most basic of commands. The specific commands are:

- Retrieve a list of TNs for a given subscriber
- Retrieve a feature summary for a given DN or subscriber
- Retrieve the line features for a given DN including:
 - Call forward no answer
 - Call forward busy
 - Call forward unconditional
 - Call waiting
 - Three way calling
 - Call transfer
- Retrieve speed dial settings for a given DN
- Retrieve domestic long distance blocking settings for a subscriber
- Retrieve international long distance blocking settings for a subscriber
- Retrieve directory assistance blocking setting for a subscriber
- Retrieve operator assistance blocking setting for a subscriber
- Retrieve a list of call hunt groups associated with a subscriber
- For a given hunt group, display the hunting sequence of DN's
- Retrieve a list of TNs that do not belong to any hunt group
- Retrieve the outbound caller id with name value for a given DN



Note

The commands allow for standard wild card support so that when a subscriber, subscriber account code, or DN is specified, the value supplied can contain the wild card percent (%) search criteria. Use caution for these cases. A wildcard pattern can return a large pool of data and can contain data that is not relevant to the desired operation.

Command Descriptions

This section explains the standard commands and their associated parameters. Several of the components are directly associated with columns from a specific Cisco BTS 10200 Softswitch table. However, there are several parameters that are derived from multiple sources and do not map directly to a table. They may have a real database representation but may be modified here for ease of use or readability.

Account ID

An account id can be assigned to one or more subscribers. An account id is used only for identification purposes. The account id is not associated with feature grouping behavior during call processing. The account id is included in billing record. This is for operational identification purpose only.

This is an optional field of 1 to 20 text characters.

Directory Number

The directory number (DN) is a reference to the telephone number. This number is a derived value composed of the office-code.ndc, office-code.ec and the dn2subscriber.dn fields. It is a concatenation to provide a consistent view of the primary directory number for a subscriber. It consists of 1 to 14 numeric characters.

Directory Number by Subscriber

This command returns a list of all DNs associated with a specified subscriber or account id. In this command, the subscriber id field or the new account-id field determines the DN(s) to list. Each row of data represents a DN entry. The additional data is supplied to provide further information about the DN.

The command returns the following parameters. This is a specific subset of data from the actual Cisco BTS 10200 Softswitch tables.

- DN (derived value)
- SUBSCRIBER.ID
- SUBSCRIBER.NAME
- SUBSCRIBER.ACCOUNT_ID
- SUBSCRIBER.MGW_ID
- SUBSCRIBER.TERM_ID

Line Features by Directory Number

This command returns a list of all features associated with a specified DN. In this command the DN is supplied to qualify the data search. The features listed below are examples of the type of data returned. These features are determined from the subscriber who has the designated DN as the primary directory number.

- CFNA
- CFB
- CFU
- CW
- TWC

- CT
- CNAM
- VM
- VMA

The data returned is not in the form of services and service packages. This query dips into the service packages and finds the actual features associated with each service assigned to the DN and its subscriber. The resulting data is the feature list. This list is returned as keys to the Feature table. The complete list of parameters returned from execution of this command are:

- DN (derived value)
- SUBSCRIBER.ID
- SUBSCRIBER.ACCOUNT_ID
- SUBSCRIBER.TERM_ID
- SUBSCRIBER.MGW_ID
- SUBSCRIBER.COSRESTRICT_ID
- SUBSCRIBER.NAME
- SUBSCRIBER.PRIVACY
- MGW.CALL_AGENT_ID
- CFU_ACTIVE (derived value)
- CFU_TO_NUMBER (derived value)
- CFNA_ACTIVE (derived value)
- CFNA_TO_NUMBER (derived value)
- CFNA_TIMEOUT (derived value)
- CFB_ACTIVE (derived value)
- CFB_TO_NUMBER (derived value)
- VM_ACTIVE (derived value)
- VMA_ACTIVE (derived value)
- CALL_WAITING (derived value)
- THREE_WAY_CALLING_FLAG (derived value)
- CALL_TRANSFER_FLAG (derived value)
- CID_NAME_FLAG (derived value)
- SPEED_DIAL_ACTIVE_FLAG (derived value)

Feature Summary by Directory Number

This command returns the list of all features associated with a specified entity. In this command the DN, Subscriber ID or Account ID is supplied to qualify the data search. The command returns the list of all the services of the associated subscriber or DN and all features associated with each specific service package. This also includes the service profiles association.

- DN (derived value)
- SUBSCRIBER.ID

- SUBSCRIBER.ACCOUNT_ID
- SUBSCRIBER.TERM_ID
- SUBSCRIBER.MGW_ID
- SUBSCRIBER.NAME
- SERVICE_ID (derived value)
- FEATURE (derived value list)

Speed Dial Settings by Directory Number

This command returns a list of all speed dial telephone numbers by the specified DN or primary subscriber directory number. All one digit speed dial values are returned as well as the feature state of speed dial. Only a single row is returned with the complete list of speed dial numbers. If a number is not defined, it is left blank. The complete list of items returned are:

- SUBSCRIBER.ID
- SUBSCRIBER.NAME
- SUBSCRIBER.ACCOUNT_ID
- DN (DERIVED VALUE)
- SUBSCRIBER.MGW_ID
- SUBSCRIBER.TERM_ID
- SPEED_DIAL (derived value of Y or N)
- DN1, DN2, ... DN9 (derived value)

Domestic Long Distance Blocking for a Subscriber or Account

This command returns the cos-restrict information for a specified subscriber. In this command the subscriber ID field or the new account-id field determines the subscriber. This command keys on the use of the Nature of Dial (NOD) means for restricting subscriber activity. The actual parameters returned are:

- SUBSCRIBER.ID
- SUBSCRIBER.NAME
- SUBSCRIBER.ACCOUNT_ID
- DN (derived value)
- SUBSCRIBER.COS_RESTRICT_ID
- COS_RESTRICT.NATIONAL_RESTRICT_TYPE
- COS_RESTRICT.NANP_WB_LIST
- COS_RESTRICT.NOD_WB_LIST
- NOD_WB_LIST.NOD

International Long Distance Blocking Setting for a Subscriber or Account

This command returns the COS_RESTRICT information for all DN(s) associated with a specified subscriber or account. In this command the subscriber ID field or the new ACCOUNT_ID field determines the subscriber. This command keys on the use of the NOD as the means for restricting subscriber activity. The actual parameters returned are:

- SUBSCRIBER.ID
- SUBSCRIBER.ACCOUNT_ID
- DN (DERIVED VALUE)
- COS_RESTRICT.ID
- COS_RESTRICT.INTL_RESTRICT_TYPE
- COS_RESTRICT.II_RESTRICT
- COS_RESTRICT.NOD_WB_LIST
- NOD_WB_LIST.NOD (INTL OR INTL_WZ1)

Directory Assistance Blocking for a Subscriber or Account

This command returns the cos-restrict information a specified subscriber or account. In this command the subscriber id field or the new account_id field determines the subscriber. This command keys on the use of the NOD as the means for restricting subscriber activity. The actual parameters returned are:

- SUBSCRIBER.ID
- SUBSCRIBER.NAME
- SUBSCRIBER.ACCOUNT_ID
- DN (derived value)
- COS_RESTRICT.ID
- COS_RESTRICT.NOD_WB_LIST
- NOD_WB_LIST.NOD (DA OR DA_TOLL)

Operator Assistance Blocking Setting for a Subscriber or Account

This command returns the Operator assistance blocking information for a specified subscriber or account. In this command the subscriber ID field or the new ACCOUNT_ID field determines the subscriber. One row of data exists for each actual BTS 10200 subscribers. The actual parameters returned are:

- SUBSCRIBER.ID
- SUBSCRIBER.ACCOUNT_ID
- DN (derived value)
- COS_RESTRICT.ID
- COS_RESTRICT.NOB_WB_LIST
- COS_RESTRICT.INTL_RESTRICT_TYPE
- COS_RESTRICT.II_RESTRICT
- NOD (NAT_OPER OR INTL_OPER)

Retrieve a List of Call Hunt Groups Associated with a Subscriber or Account

This command returns the list of one or more hunt groups associated with a specified subscriber. In this command the subscriber Id field or the new account_id field determines the subscriber. Each row of data represents a hunt group membership. The actual parameters returned are:

- SUBSCRIBER.ID
- SUBSCRIBER.NAME
- SUBSCRIBER.ACCOUNT_ID
- DN (derived value)
- MLHG.ID
- MLHG.MAX_LINES
- MLHG.CALL_AGENT_ID
- MLHG.HUNT_TYPE
- MLHG_TERMINAL.TERM_ID
- MLHG_TERMINAL.TERMINAL

Hunting Sequence of Directory Numbers by Hunt Group

This command returns the hunt sequence as a list of telephone numbers (TNs) associated with a specified Hunt Group. Each row of data equates to a relative terminal in the hunt group. This avoids static lists with a fixed number of terminals. The actual parameters returned are:

- MLHG_TERMINAL.TERMINAL
- MLHG.ID
- MLHG_TERMINAL.TERM_ID
- DN (derived value)
- DN2SUBSCRIBER.SUB_ID
- SUBSCRIBER.ACCOUNT_ID
- MLHG.CALL_AGENT_ID
- MLHG.HUNT_TYPE
- MLHG_PREF_LIST.REL_TERMINAL (derived value)

List Directory Numbers that Do Not Belong to a Hunt Group

This command returns a list of all DNs associated with a specified subscriber and that are not associated with a hunt group. Under the present definition, the list can be long. Each row of the data indicates a TN with a free association. It is strongly recommended that some qualifications are provided to narrow the scope of the command. For example, list all free DNs in a particular account where the account ID is some specific value. The actual parameters returned are:

- SUBSCRIBER.ID
- SUBSCRIBER.NAME
- SUBSCRIBER.ACCOUNT_ID
- SUBSCRIBER.MGW_ID

- SUBSCRIBER.TERM_ID
- DN (derived value)

Outbound Caller ID with Name Value by Directory Number

This command returns the caller ID and NAME for a specified TN. Each row of data represents a separate subscriber TN. The read is based on the actual TN of a subscriber. The actual parameters returned are:

- SUBSCRIBER.ID
- SUBSCRIBER.ACCOUNT_ID
- DN (derived value)
- SUBSCRIBER.MGW_ID
- SUBSCRIBER.TERM_ID
- SUBSCRIBER.NAME
- CID_NAME_FLAG
- CID_NUMBER_FLAG
- CID_CALL_WAITING_FLAG

Command Format

This section defines the CLI syntax of the commands and the semantics of their usage. Included are examples utilizing different options to control the output and pagination of the data.

As a matter of consistency with the Cisco BTS 10200 Softswitch's exiting command reference, the telephone number (TN) is referred to as a DN. Note that in all cases, this is a composite value. This is in line with the present Cisco BTS 10200 Softswitch data definitions.

Directory Numbers by Subscriber

This command returns the list of all telephone numbers (DNs) associated with a specified subscriber. In this command the subscriber ID field or the new ACCOUNT_ID field determines the subscriber.

This is a specific subset of available data designed to provide germane information.

```
show sub-dn-list sub_id=foo_123;
or
```

```
account-id=ABC123456789;
```

Sample Response:

```
DN=4692550529
ID=foo_123
ACCOUNT_ID=ABC123456789
MGW_ID=mgw_123
TERM_ID=s0/ds1_2/3
```

```

TERM_TYPE=mgw_123
NAME=Double D
...

```

Line Features by Directory Number

This command returns the settings of specific features associated with a specified DN. In this command the DN, subscriber ID or account ID is supplied to qualify the data search. The command returns the feature list and feature data for the specified DN or subscriber primary directory number.

The line features are derived from the subscriber-service-profile and associated service entries. Features are pulled from the service packages. The associated sub-feature-data is queried to get the composite data settings for the line side features.



Note

If a feature tracked by this command is not enabled for a particular subscriber, then the feature is not listed in the output. Only features that are part of the subscriber's service profile are displayed.

The command returns a specific single row if the TN is fully qualified. If any feature is not allowed or not configured, the fields are left blank.

```
show dn-line-feat dn=4692550529;
```

or

```
sub-id=foo_123;
```

or

```
account-id=-ABC123456789;
```

Sample Response:

```

DN=4692550529
SUB_ID=foo_123
ACCOUNT_ID=ABC123456789;
NAME=Double D
MGW_ID=mgw_123
TERM_ID=s0/ds1_2/3
COS_RESTRICT_ID=basic
PRIVACY=NONE
CALL_AGENT_ID=CA146
CFU_ACTIVE=Y
CFU_TO_NUMBER=02145551212
CFNA_ACTIVE=Y
CFNA_TO_NUMBER=02145551212
CFB_ACTIVE=N
CFB_TO_NUMBER=02145551212

```

```

VM_ACTIVE=Y
VMA_ACTIVE=N
SERVICE_ID=sip_service
CALL_WAITING=N
THREE_WAY_CALLING_FLAG=N
CALL_TRANSFER_FLAG=N
CID_NAME_FLAG=Y
SPEED_DIAL_ACTIVE_FLAG=N
...

```

Subscriber Feature Summary by Directory Number

This command returns a list of specific features associated with a specified DN. In this command the DN, subscriber ID or account ID is supplied to qualify the data search. The command returns a feature list and feature data for the specified DN or subscriber primary directory number.

The feature list is derived from the subscriber-service-profile and associated SERVICE entries. Features are pulled from the service packages. The associated sub-feature-data is queried as well. “

The command returns a specific single row if the DN is fully qualified. If a feature is not allowed or not configured, the fields are left blank.

```

show dn-feat-list dn=4692550529;
or
    sub-id=foo_123;
or
    account-id=ABC123456789;

```

Sample Response:

```

DN=4692550529
SUB_ID=foo_123
ACCOUNT_ID=ABC123456789;
NAME=Double D
MGW_ID=mgw_123
TERM_ID=s0/ds1_2/3
SERVICE_ID=Gold package
FEATURE=CFU,CFNA,CFB,TWC
...

```

Speed Dial Settings by Directory Number

This command returns a list of all speed dial telephone a specified subscriber with the primary directory number supplied in the parameters. All one digit speed dial values are returned as a single row of data.

```

show dn-sd-list dn=4692550529;
or

```

```
    sub-id=foo_123;  
or  
    account-id=ABC123456789;
```

Sample Response:

```
DN=4692550529  
SUB_ID=foo_123  
ACCOUNT_ID=ABC123456789;  
MGW_ID=mgw_123  
TERM_ID=s0/ds1_2/3  
DN1=9725191997  
DN2=4692550528  
...  
DN9=
```

Domestic Long Distance Blocking for a Subscriber or Account

This command returns the cos-restrict and nod information for a specified subscriber. In this command the subscriber id field or the new account-id field determines the subscriber. These fields are the only arguments for the command. One row of data exists for each actual Cisco BTS 10200 Softswitch subscriber. If an account id is shared among subscribers, then multiple subscribers can be returned with this command.

```
show sub-id-block sub-id=foo_123;  
or  
    account-id=ABC123456789;
```

Sample Response:

```
DN=4692550529  
SUB_ID=foo_123  
ACCOUNT_ID=ABC123456789;  
COS_RESTRICT_ID=basic  
NATIONAL_RESTRICT_TYPE=NATIONAL_ONLY  
NAPA_WB_LIST=WHITE  
NOD_WB_LIST=WHITE  
...
```

International Long Distance Blocking Setting for a Subscriber or Account

This command returns the cos-restrict and nod information for a specified subscriber or account. In this command the subscriber id field or the new account-id field determines the subscriber. These fields are the only arguments for the command. One row of data is returned for each actual Cisco BTS 10200 Softswitch subscriber primary directory number.

```
show sub-intl-block sub-id=foo-123;
```

```
or
    account-id=ABC123456789;
```

Sample Response:

```
DN=4692550529
SUB_ID=foo_123
ACCOUNT_ID=ABC123456789;
COS_RESTRICT_ID=basic
INTL_RESTRICT_TYPE=USE_WHITE_LIST
II_WB_LIST=WHITE
NOD_WB_LIST=WHITE
...
```

Directory Assistance Blocking for a Subscriber or Account

This command returns the cos-restrict information a specified subscriber or account. In this command the subscriber id field or the new account-id field determines the subscriber. These fields are the only arguments to the command. One row of data exists for each actual BTS 10200 subscriber primary directory number.

```
show sub-da-block sub-id=foo-123;
or
    account-id=ABC123456789;
```

Sample Response:

```
DN=4692550529
SUB_ID=foo_123
ACCOUNT_ID=ABC123456789;
COS_RESTRICT_ID=basic
NATIONAL_RESTRICT_TYPE=USE_WHITE_LIST
NAPA_WB_LIST=WHITE
NOD_WB_LIST=WHITE
...
```

Operator Assistance Blocking setting for a Subscriber or Account

This command returns the operator assistance blocking information for a specified subscriber or account. In this command the subscriber id field or the new account-id field determines the subscriber. These fields are the only arguments to the command. One row of data exists for each actual Cisco BTS 10200 Softswitch subscriber primary directory number.

```
show sub-oper-block sub-id=foo-123;
or
    account-id=ABC123456789;
```

Sample Response:

```

DN=4692550529
SUB_ID=foo_123
ACCOUNT_ID=ABC123456789
COS_RESTRICT_ID=basic
NOD_WB_LIST=WHITE
NOD=OPERATOR
...

```

Retrieve a List of Call Hunt Groups Associated with a Subscriber or Account

This command returns a list of one or more hunt groups associated with a specified subscriber or account id. In this command the subscriber id field or the new account-id field determines the subscriber. These fields are the only arguments for the command. Normally a subscriber has only one hunt group membership defined by the mlhg-id. However, if an account id is shared across several subscriber records, then multiple entries can be returned. Each row of data represents a hunt group. One row of data exists for each actual Cisco BTS 10200 Softswitch subscriber primary directory number.

```

show hg-dn-listdn=4692550529;
or
      sub-id=foo-123;
or
      account-id=ABC123456789;

```

Sample Response:

```

DN=4692550529
SUB_ID=foo_123
ACCOUNT_ID=ABC123456789
CALL_AGENT_ID=CA146
MLHG_ID=Home
MAX_LINES=5
HUNT_TYPE=NORMAL
TERM_ID=admin_pool
TERMINAL=3
...

```

Hunting Sequence of Directory Numbers by Hunt Group

This command returns the hunt sequence as a list of telephone numbers (DNs) associated with a specified hunt group. The parameters returned are listed below. Each row of data equates to a relative terminal in the hunt group. This avoids static lists with a fixed number of terminals. The data to display can be qualified by either the actual hunt group id or the associated account id.

```

show hg-sequence mlhg-id=foo-123;
or
      account-id=ABC123456789;

```

Sample Response:

```
DN=4692550529
SUB_ID=Home
CALL_AGENT_ID=CA146
MAX_LINES=5
HUNT_TYPE=NORMAL
REL_TERMINAL=3
...
```

List Directory Numbers that Do Not Belong to a Hunt Group

This command returns a list of all DNs associated with a specified subscriber and account id that are not associated with any hunt group. Under the present definition, the list can be long. The parameters returned are listed below. Each row of the data indicates a TN or subscriber primary directory number with a free association. The account id can include a wild card to further expand the scope of the search for TNs.

```
show sub-dn-find account-id=ABC1234%;
or
sub-id=foo-123;
```

Sample Response:

```
DN=4692550529
SUB_ID=foo_123
ACCOUNT_ID=ABC123456789
MGW_ID=mgw_123
TERM_ID=s0/ds1_2/3
...
```

Outbound Caller ID with Name Value by Directory Number

This command returns the Caller ID feature value and name for a specified subscriber or account id. The parameters returned are listed below. Each row of data represents a separate subscriber TN. The read is based on the actual DN or subscriber primary directory number. Each row returned represents a specific TN with CID settings. If the search criterion contains a wild card, several entries can be returned.

```
show sub-cid sub-id=foo-123;
or
account-id=ABC123456789;
```

Sample Response:

```
DN=4692550529
SUB_ID=foo_123
```

```
ACCOUNT_ID=ABC123456789
```

```
MGW_ID=mgw_123
```

```
TERM_ID=d0/s0_123
```

```
NAME=Double D
```

```
PRIVACY=NONE
```

```
...
```

