# PnP Commands

This chapter contains the following sections:

# pnp device

To define the device username and the password, use the **pnp device** command in Global Configuration mode. To restore the default configuration, use the **no** form of this command.

### Syntax

**pnp device username** *username* **password** *password*

**encrypted pnp device username** *username* **password** encrypted-*password*

**no pnp device**

### Parameters

- ***username***—Specifies device user name (range: 1-64 characters).
- ***password***—Specifies device password (range: 1-64 characters).
- ***encrypted-password***—Specifies encrypted device password.

### Default Configuration

N/A

### Command Mode

Global Configuration mode

### User Guidelines

Use the **pnp device** command to configure a username and a password used in each PnP message sent by the PnP agent to a PnP server.

### Example

The following example configures device name and password:

```
switchxxxxxx(config)# pnp device username sjohn password Tan123
```

# pnp discovery timeout

To define the PnP agent discovery timeout in seconds and the exponential factor, use the **pnp discovery timeout** command in Global Configuration mode. To restore the default configuration, use the **no** form of this command.

### Syntax

**pnp discovery timeout** *timeout exponential-factor max-timeout*

no pnp discovery timeout

### Parameters

- *timeout*—Specifies the time to wait, in seconds, before attempting to discovery after a discovery is failed. The range is from 1 to 2000000.
- *exponential-factor*—Exponential factor value is the value that triggers the discovery attempt exponentially. The range is from 1 to 9.
- *max-timeout*—Specifies the maximum value of the timeout. The range is from 1 to 2000000.

### Default Configuration

*timeout*—60 seconds

*exponential-factor*—3

*max-timeout*—540 seconds

### Command Mode

Global Configuration mode

### User Guidelines

Use the **pnp discovery timeout** command to configure a discovery timeout in seconds and an exponential factor. The following formula is used to calculate the next timeout using the previous one:

*next-timeout* = (*previous-timeout***exponential-factor* < *max-timeout*) ?

*previous-timeout***exponential-factor* : *max-timeout*;

### Example

The following example configures the discovery timeout and factor:

```
switchxxxxxx(config)# pnp discovery timeout 100 2 800
```

# pnp enable

To enable the PnP agent, use the **pnp enable** command in Global Configuration mode. To disable the PnP agent, use the **no** form of this command.

### Syntax

pnp enable

no pnp enable

### Default Configuration

PnP agent is enabled.

### Command Mode

Global Configuration mode

### User Guidelines

Use the command to enable the PnP agent.

### Example

The following example disables the PnP agent:

```
switchxxxxxx(config)# no pnp enable
```

# pnp reconnect interval

To define the PnP agent interval between sequential PnP sessions, use the **pnp reconnect interval** command in Global Configuration mode. To restore the default configuration, use the **no** form of this command.

### Syntax

**pnp reconnect interval** *timeout*

**no pnp reconnect interval**

### Parameters

- ***timeout***—Specifies the interval in seconds time before attempting to reconnect the session after a connection is lost. The range is from 1 to 2000000.The default is 30

### Default Configuration

30 seconds

### Command Mode

Global Configuration mode

### User Guidelines

Use the **pnp reconnect interval** command to configure an interval between PnP sessions.

### Example

The following example configures PnP session interval:

```
switchxxxxxx(config)# pnp interval reconnect interval 100
```

# pnp resume

To resume the PnP agent, use the **pnp resume** command in Global Configuration mode.

### Syntax

pnp resume

### Default Configuration

PnP agent is enabled

### Command Mode

Global Configuration mode

### User Guidelines

Use the **pnp resume** command, to take out immediately the PnP agent from a waiting state:

- From the Discovery Waiting state to the Discovery state OR
- From the PnP Session Waiting state to the PnP Session state

### Example

The following example resumes the PnP Server discovery:

```
switchxxxxxx(config)# pnp resume
```

# pnp transport

To define the PnP transport, use the **pnp transport** command in Global Configuration mode. To restore the default configuration, use the **no** form of this command.

### Syntax

**pnp transport** {**http** | **https**} *ip-address* [**port** *port-number*]

**no pnp transport**

### Parameters

- **http** | **https**—Specifies the transport protocol.
- ***ip-address***—Specifies the IPv4 address or IPv6 address, or DNS name of the PnP server.
- ***port-number***—Specifies the TCP port of the PnP server. If the parameter is not defined then the following default value is applied:
  - **HTTP**—80
  - **HTTPS**—443

### Default Configuration

- DHCP Option 43
- DNS:

  PnP Server IP Address—pnpserver

  Protocol—HTTP

  Port—80
- Cisco Cloud (Default):

  PnP Server IP Address—devicehelper.cisco.com

  Protocol—HTTPS

  Port—443

### Command Mode

Global Configuration mode

### User Guidelines

Use the **pnp transport** command to configure a transport protocol on whoich the PnP protocol is running.

### Example

The following example configures the PnP transport:

```
switchxxxxxx(config)# pnp transport http 145.1.3.4
```

# pnp watchdog timeout

To define the PnP agent watchdog timeout, use the **pnp watchdog timeout** command in Global Configuration mode. To restore the default configuration, use the **no** form of this command.

### Syntax

**pnp watchdog timeout** *timeout*

**no pnp watchdog timeout**

### Parameters

- ***timeout***—Specifies the time to wait a reply from a PnP or File server. The range is from 1 to 180.

### Default Configuration

60 seconds

### Command Mode

Global Configuration mode

### User Guidelines

Use the **pnp watchdog timeout** command to configure a watchdog timeout in seconds.

### Example

The following example configures the watchdog timeout:

```
switchxxxxxx(config)# pnp watchdog timeout 120
```

# show pnp

To display the PnP agent information, use the **show pnp** command in Privileged EXEC mode.

### Syntax

**show pnp**

### Command Mode

Privileged EXEC mode

### User Guidelines

Use the command to display information of the PnP agent.

**Example 1.** The following example displays PnP agent information when the PnP agent is disabled:

```
switchxxxxxx# show pnp
Administrative status: disabled
Operational status:
PnP Agent state:
Transport protocol: HTTP
Source Ip address:
TCP port: 80 (default)
Username:
Password's MD5 digest:
Discovery
  Timeout: 60 seconds (default)
  Exponential Factor: 3 (default)
  Maximum Timeout: 540 seconds
PnP Session Reconnection Interval:
  Current:
 >Default: 60 sec
  Manual Configuration:
  PnP:
PnP Watchdog Timeout: 60 seconds
```

**Example 2.** The following example displays PnP agent information when the PnP agent is not ready:

```
switchxxxxxx# show pnp
Administrative status: enabled
Operational status: notReady (No PnP Server IP Address)
PnP Agent state:
Transport protocol: HTTP (from DHCP Option 43)
Server IP address:
Source Ip address:
TCP port: 80 (default)
Username:atre1234c (from DHCP Option 43)
Password's MD5 digest: 1238af77aaca17568f1298cced165fec (from DHCP Option 43)
Discovery
  Timeout: 60 seconds (default)
  Exponential Factor: 3 (default)
  Maximum Timeout: 540 seconds
PnP Session Reconnection Interval:
  Current:
 >Default: 60 sec
  Manual Configuration:
  PnP:
PnP Watchdog Timeout: 60 seconds
```

**Example 3.** The following example displays PnP agent information when the PnP agent is enabled in the PnP Session state:

```
switchxxxxxx# show pnp
Administrative status: enabled
Operational status: ready
PnP Agent state: PnP Session
Transport protocol: HTTP (from DHCP Option 43)
Server IP address: 176.1.1.1 (from DHCP Option 43)
Source Ip address:
TCP port: 80 (default)
Username:atre1234c (from DHCP Option 43)
Password's MD5 digest: 1238af77aaca17568f1298cced165fec (from DHCP Option 43)
Discovery Timeout: 60 seconds (default)
Discovery Exponential Factor: 3 (default)
Discovery Maximum Timeout: 540 seconds
PnP Session Interval Timeout: 60 (default)
PnP Watchdog Timeout: 60 seconds
```

**Example 4.** The following example displays PnP agent information when the PnP agent is enabled in the PnP Session state and the PnP server was changed:

```
switchxxxxxx# show pnp
Administrative status: enabled
Operational status: ready
PnP Agent state: PnP Session
Transport protocol: HTTP (from DHCP Option 43
Server IP address: 176.1.1.1 (from DHCP Option 43);
     Next session: 167.21.3.4 (from DHCP Option 43)
Source Ip address:
TCP port: 80 (default)
Username:atre1234c (from DHCP Option 43)
Password's MD5 digest: 1238af77aaca17568f1298cced165fec (from DHCP Option 43)
Discovery Timeout: 60 seconds (default)
Discovery Exponential Factor: 3 (default)
Discovery Maximum Timeout: 540 seconds
PnP Session Interval Timeout: 60 (default)
PnP Watchdog Timeout: 60 seconds
```

**Example 5.** The following example displays PnP agent information when the PnP agent is enabled in the PnP Session Waiting state:

```
switchxxxxxx# show pnp
Administrative status: enabled
Operational status: ready
PnP Agent state: PnP Session Waiting
Transport protocol: HTTPS
Server IP address: 176.1.1.1
Source Ip address: 120.10.10.10
TCP port: 180
Username:atre1234c (from DHCP Option 43)
Password's MD5 digest: 1238af77aaca17568f1298cced165fec (from DHCP Option 43)
Discovery Timeout: 60 seconds (default)
Discovery Exponential Factor: 3 (default)
Discovery Maximum Timeout: 540 seconds
PnP Session Interval Timeout: 180 seconds (from PnP Backoff message)
Timer Remainder: 150 seconds
PnP Watchdog Timeout: 60 seconds
```

**Example 6.** The following example displays PnP agent information when the PnP agent is in state Discovery:

```
switchxxxxxx# show pnp
Administrative status: enabled
Operational status: ready
```

```
PnP Agent state: PnP Session
Transport protocol: HTTP (from DHCP Option 43
Server IP address: 176.1.1.1 (from DHCP Option 43);
     Next session: 167.21.3.4 (from DHCP Option 43)
Source Ip address:
TCP port: 80 (default)
Username:atre1234c (from DHCP Option 43)
Password's MD5 digest: 1238af77aaca17568f1298cced165fec (from DHCP Option 43)
Discovery Timeout: 60 seconds (default)
Discovery Exponential Factor: 3 (default)
Discovery Maximum Timeout: 540 seconds
PnP Session Interval Timeout: 60 (default)
PnP Watchdog Timeout: 60 seconds
```

**Example 7.** The following example displays PnP agent information when the PnP agent is in state Discovery Waiting:

```
switchxxxxxx# show pnp
Administrative status: enabled
Operational status: ready
PnP Agent state: PnP Session
Transport protocol: HTTP (from DHCP Option 43
Server IP address: 176.1.1.1 (from DHCP Option 43);
     Next session: 167.21.3.4 (from DHCP Option 43)
Source Ip address:
TCP port: 80 (default)
Username:atre1234c (from DHCP Option 43)
Password's MD5 digest: 1238af77aaca17568f1298cced165fec (from DHCP Option 43)
Discovery Timeout: 60 seconds (default)
Discovery Exponential Factor: 3 (default)
Discovery Maximum Timeout: 540 seconds
PnP Session Interval Timeout: 60 (default)
PnP Watchdog Timeout: 60 seconds
```