TIDP Protocol

Teldat-Dm 761-I

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Chapter 1 TIDP Protocol

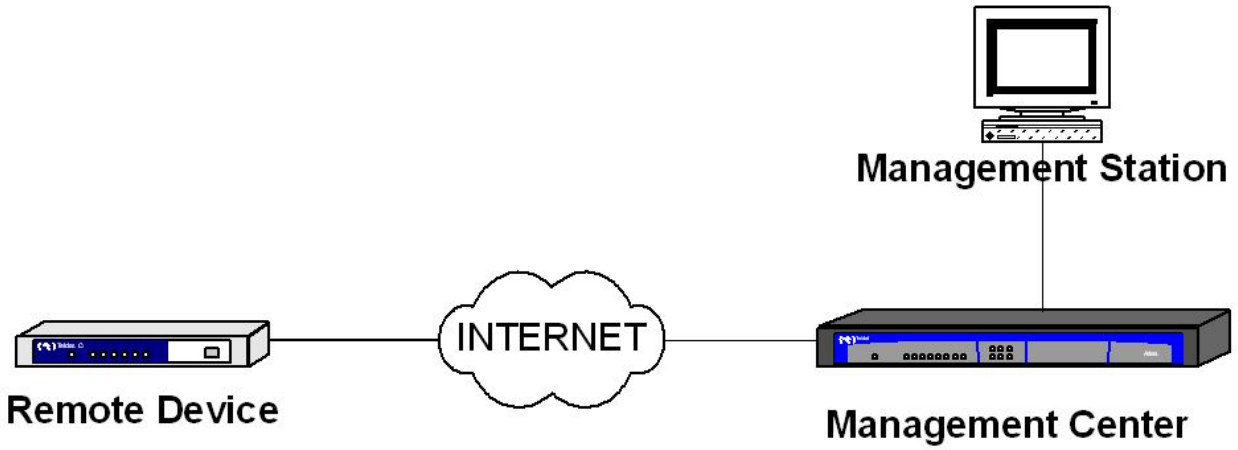
1.1 Introduction

The TIDP (Teldat IP Discovery Protocol) is a proprietary protocol owned by Teldat that allows a device to notify another device of its IP address. This is particularly useful when managing remote devices that are dynamically assigned an address in each connection. The TIDP protocol will be briefly described in this chapter.

1.2 TIDP protocol

1.2.1 User scenario

Generally, the TIDP protocol is used in scenarios where there is a remote device to be managed, a management center and a management station that uses SNMP to communicate with the management center. In these cases, the TIDP protocol is used between the remote device and the management center. The remote device acts as client and the management center as server.



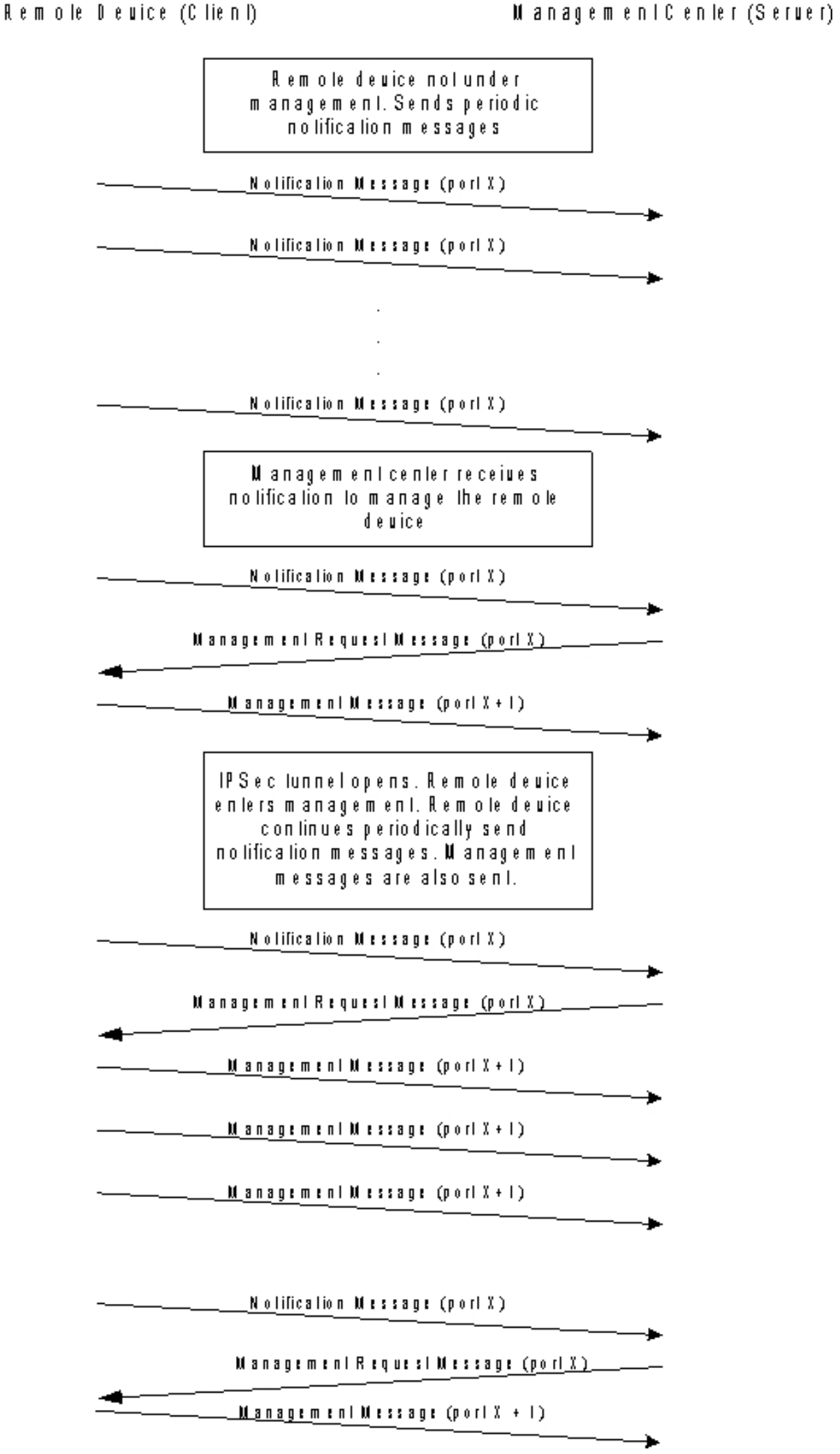
User screnario

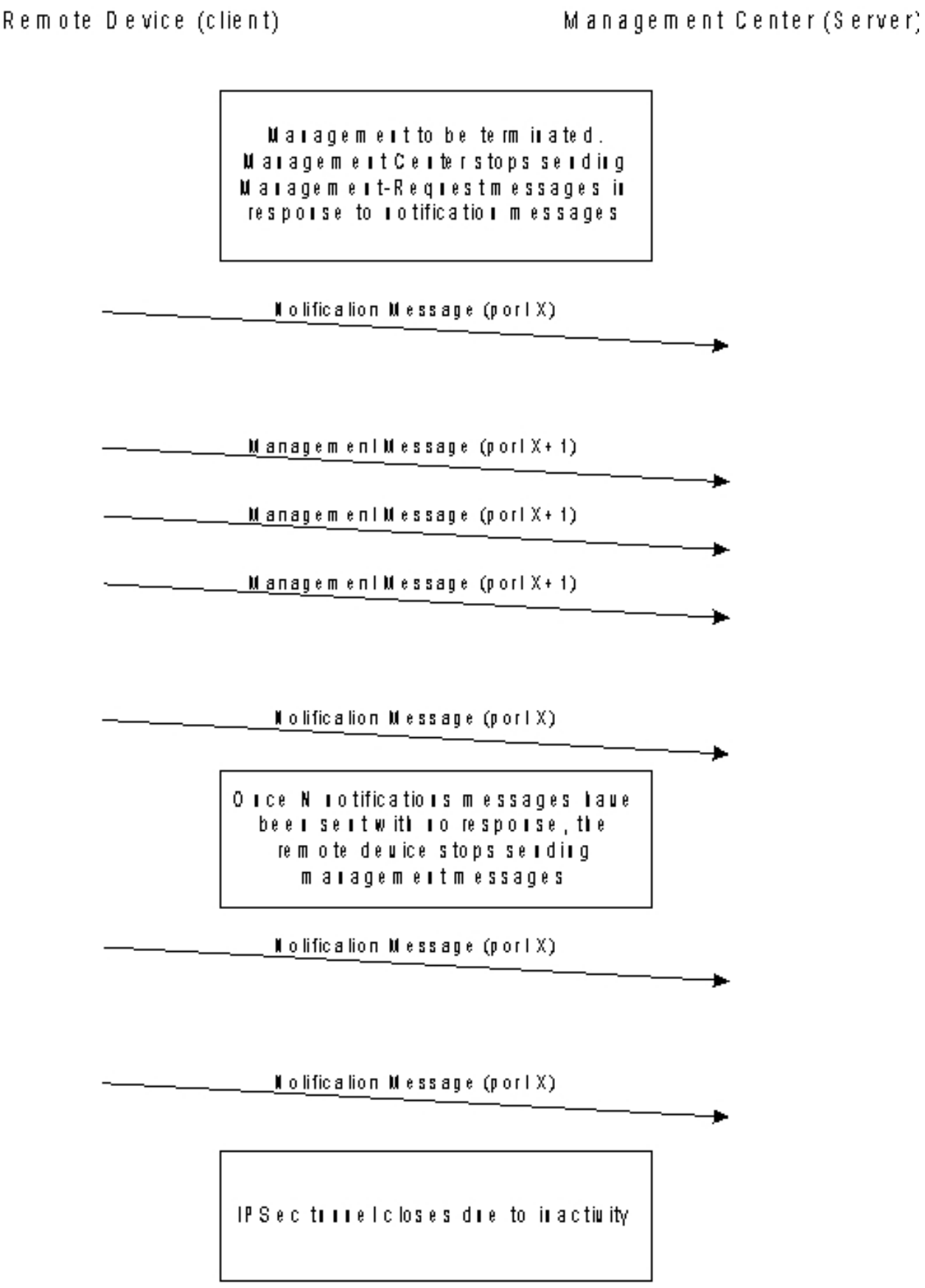
The TIDP protocol is run over UDP, employing two consecutive ports. The remote device sends periodic *Notification Messages* to the management stations configured. These messages include the remote device ID (serial number and hostname) and the local IP address, if configured.

If device management is not required, the management center discards the notification message. If it is required, then the management station uses the device serial number or hostname to tell the management center which device to manage. At this point, and upon receipt of a notification message, the management center sends a *Management Request Message* to the remote device. The remote device sends a *Management Message* in response with one peculiarity: the management message is sent to the port immediately above the port where the notification messages are sent. In this way, provided that the remote device and management center are correctly configured, it's possible to create an IPSec tunnel for management purposes, while notification messages are sent in clear. Once the IPSec tunnel has been created, the management center informs the management station of the said remote device's IP address.

During management, the remote device sends periodic management messages to maintain the IPSec tunnel. In addition, the management center sends a management request packet in response to each notification message sent by the remote device. When device management is no longer required, the management center stops responding to the notification messages sent by the remote device. After a given number of consecutive unanswered notifications, the remote device stops sending management messages and the IPSec tunnel closes due to inactivity.

The following diagram summarizes the packet exchange described:


Remote Device (Client)
Management Center (Server)
Remote device not under management. Sends periodic notification messages
Notification Message (port X)
Notification Message (port X)
Notification Message (port X)
Management center receives notification to manage the remote device
Notification Message (port X)
Management Request Message (port X)
Management Message (port X+1)
IPSec tunnel opens. Remote device enters management. Remote device continues periodically send notification messages. Management messages are also sent.
Notification Message (port X)
Management Request Message (port X)
Management Message (port X+1)
Management Message (port X+1)
Management Message (port X+1)
Notification Message (port X)
Management Request Message (port X)
Management Message (port X+1)



1.2.2 Packet types

There are four different packet types:

- *Notification Message*: the remote device periodically sends these messages to the management center to announce its presence.
- *Notification-Request Message*: sent by the management center to request a notification message from a remote device.
- *Management-Request Message*: sent by the management center to initiate management over a remote device.

- *Reset-Request Message*: sent by the management center to inform the remote device that it must execute a reset operation. This command is ignored if the remote device is a router.
- *Management Message*: the remote device sends these messages to the management center to initiate and maintain the channel being used for management.

1.2.3 Operating modes

There are two operating modes for a remote device or client running the TIDP protocol:

Normal mode: the remote device sends periodic notification messages on startup.

- Trigger mode: the remote device only sends notification messages when they are triggered by a particular event. In this mode, the notification messages are sent a specific number of times rather than being sent continuously. This mode is used when there is an alternative path for communicating with the remote device. So, for example, if the devices are equipped with GPRS, a call to a phone number can wake the remote device up. The following events can trigger notification messages:
    - A change to the allocated IP address.
    - Receiving a wake-up call.
    - Receiving a notification request message.

Chapter 2 Configuring TIDP

2.1 Accessing the configuration

To access the TIDP protocol configuration, type in the **FEATURE IP-DISCOVERY** command in the main configuration menu:

```
*config
Config>feature ip-discovery
-- Teldat IP Discovery Protocol configuration --
TIDP config>
```

2.2 Configuration description

You need to know whether you are going to set up a client (referred to as the remote device in the previous chapter) or a server (referred to as the management center in the previous chapter) when configuring TIDP because the configuration commands are different in each case. Device behavior (client or server) is defined through the *mode* command.

2.2.1 Configuring the client (remote device)

The configuration in the remote device can be divided into three distinct groups:

- Operating mode: normal or trigger. The operating mode is defined through the *method* command.
- Servers sent notification messages. Each server is defined by IP address and packet destination port, as well as by IP address (optional) and packet source port. Additional parameters can be configured, such as the interval between sending notification messages and the sending of licensing information. Servers are configured through the *discover-station* command.
- List of telephone numbers that cause the device to wake up. The telephone number lists are configured through the *caller-list* command. Once created, a list can be assigned to one or several defined servers using the appropriate identifier.

2.2.2 Configuring the server (management center)

Server configuration consists of two elements:

- List of UDP ports at which the server must listen for reception of notification packets from the remote device. This list is configured through the *master-port* command.
- Maximum number of remote devices that can be simultaneously managed by the server (TIDP Master or management center). The corresponding command is *master-max-stations* .

2.3 Configuration commands

The following table summarizes the TIDP configuration commands. These commands are explained in detail in subsequent sections.

Command	Function
? (HELP)	Displays the configuration commands or the subcommand options.
CALLER-LIST	Allows you to configure a list of telephone numbers that cause the device to wake up.
DISCOVERY-STATION	Configures the information required to communicate with a server.
LIST	Displays the TIDP configuration.
MASTER-PORT	Configures listening ports in a server.
MASTER-MAX-STATIONS	Establishes the maximum number of remote devices (clients) that can be simultaneously managed by a management center (server).
METHOD	Configures TIDP operating mode in the case of a remote device (client).
MODE	Configures device to act as client (remote device) or server (management center).
NO	Allows you to delete part of the introduced configuration.
EXIT	Exits TIDP configuration menu.

2.3.1 ? (HELP)

Displays all the available commands or their respective options.

Syntax:

```
TIDP config>?
```

Example:

```
TIDP config>?
  caller-list          Configure a list of authorized callers
  discovery-station    Configure TIDP discovery station parameters
  list                 List TIDP parameters
  master-max-stations  Set max number of routers a TIDP master can manage
  master-port          Configure TIDP master-port parameters
  method               Set TIDP method (normal/trigger)
  mode                 Set TIDP mode (client/server)
  no                   Negates a command or sets its defaults
  exit
TIDP config>
```

2.3.2 CALLER-LIST

Configures a list of telephone numbers that wake up the device. The phone lists are associated with one or various servers. When the client receives a call from one of the numbers on the list, it starts sending notification messages to all of the servers associated with the list.

The plus character represented by '+' acts as a wildcard when entering phone numbers and is used to substitute one or more characters. For example, by entering phone number '9185+44', all numbers starting with '9185' are considered as matching this number. Any numbers coming after the '+' character are ignored since the '+' character does not correspond to a single character.

Syntax:

```
TIDP config>TIDP config>caller-list <identifier> <telephone number>
```

Example:

Creating two telephone lists:

- First list, with identifier 11 and telephone numbers 1234567 and 9876543.
- Second list, with identifier 2 and telephone number 1234567 and any number beginning with 91 or 734.

```
TIDP config>caller-list 11 1234567
TIDP config>caller-list 11 9876543
TIDP config>caller-list 2 1234567
TIDP config>caller-list 2 91+
TIDP config>caller-list 2 734+
TIDP config>list caller-list
Caller-List Id     Calling Number
--------------     --------------------
      2            1234567
                   91+
                   734+
      11           1234567
                   9876543
TIDP config>
```

2.3.3 DISCOVERY-STATION

Configures the information necessary for communicating with a server. This includes:

- Server destination IP address: address to which the TIDP packets are sent.
- Server destination port: UDP port to which the TIDP packets are sent.
- TIDP packet source IP address. It may be configured as a numerical address or as an interface that provides the address of each generated packet. When this value is 0.0.0.0, the source IP address is obtained from the interface that the packet came from. If a disabled interface is configured, or one whose IP has not been configured, no pack-

et shall be generated.

- Source UDP port of the TIDP packets.
- Next hop in TIDP packets. It may be configured as a numerical address or as a directly connected interface. If the configured value is equal to 0.0.0.0, it shall be selected whenever each packet is routed.
- Notification message sending interval. This can be configured to millisecond precision.
- List of associated telephone numbers that enable communication with the server.
- If TIDP packets leave through a switched interface, such as ISDN or GPRS, you can configure whether you want the traffic generated by TIDP packets to provoke a call or not.
- Option to send licensing information. When this is enabled, the notification packets transmit the license code in the sequence number field and activate a flag which determines the type of license installation performed.

Note

When the next hop is configured by means of the TIDP menu and another is configured through Policy Routing (see manual “Dm745-I Policy Routing”), the next hop selected via TIDP shall prevail.

Syntax:

```
TIDP config>discovery-station <identifier>
  caller-list <id>    Assign a list of calling numbers to this station
  dial-on             Allow dialling
  ip <ip address>     Station IP address
  no                  Negates a command or sets its defaults
        dial-on               Allow dialing
        caller-list <id>      Assign list 0 (no callers) to this station
        send-licence          Send licence notification format
  port <port>         Destination UDP port
  send-licence        Send licence notification format
  source              Source parameters (IP/port)
        ip                    Notification IP source address
           <ip address>       IPv4 address
           <interface>        Inteface name
        port <port>           Source UDP port
  next-hop                    Next-hop IP address
           <ip address>       Ipv4 address
           <interface>        Interface name
  timer <timer>       Notification interval
  milliseconds <value> Value (milliseconds)
TIDP config>
```

caller-list	Assigns phone lists that cause TIDP packets to be sent to the server.
dial-on	TIDP packets trigger a call if they are sent through a switched interface.
ip	TIDP packet destination IP address (the server address).
no dial-on	TIDP packets do not trigger calls if they are sent through a switched interface.
no caller-list	Deletes a phone list assignment.
no send-licence	Disables sending licensing information in TIDP notification packets.
port	TIDP packet destination port.
send-licence	Enables sending licensing information in TIDP notification packets.
source ip	TIDP packet source IP address.
source port	TIDP packet source port.
next-hop	IP address belonging to the next hop.
timer	Notification message sending interval. In *trigger* mode, this is defined using the METHOD command and sends 10 notifications. Hence, if you configure a 10 second *timer*, the total timer time is 100 seconds. That is, no further traffic is generated by the device once 100 seconds have elapsed. If you add millisecond precision, you will be able to deliver notifications at more precise time intervals (accurate to under a second).

Example 1:

```
TIDP config>; Management Center address is 10.254.254.254,

TIDP config>; listening in UDP port 45670
```

```
TIDP config>; Remote device listening in UDP port 45670

TIDP config>discovery-station 1 ip 10.254.254.254
TIDP config>discovery-station 1 port 45670
TIDP config>discovery-station 1 source port 45670
TIDP config>; Notification Message is sent every 10 seconds

TIDP config>discovery-station 1 timer 10
TIDP config>; Additionally we want to establish the link, if it is not already done

TIDP config>discovery-station 1 dial-on
TIDP config>
```

Example 2:

```
TIDP config>; El Centro de Gestión tiene la dirección 10.254.254.254,
TIDP config>; escuchando en el puerto UDP 45785
TIDP config>; El equipo remoto escucha en el puerto UDP 45768
TIDP config>discovery-station 1 ip 10.254.254.254
TIDP config>discovery-station 1 port 45785
TIDP config>discovery-station 1 source port 45768
TIDP config>; Se envía un Notification Message cada 150 milisegundos
TIDP config>discovery-station 1 timer 0s milliseconds 150
TIDP config>
```

Command History:

Version	Modification
11.00.05	Implementation of *interface* under the *source ip* option.
11.01.00	Implementation of *interface* under the *source ip* option.
11.00.05	Implementation of the *next-hop* option.
11.01.00	Implementation of the *next-hop* option.

2.3.4 LIST

Displays the TIDP configuration.

Syntax:

```
TIDP config>list
  all                  List all TIDP parameters
  caller-list          List caller-lists configured
  discovery-station    List discovery stations
  master-max-stations  List max number of routers a TIDP master can manage
  master-port          List master ports
  method               List method
  mode                 List mode
TIDP config>
```

all	Displays the entire TIDP configuration.
caller-list	Displays the configured phone lists.
discovery-station	Displays the configured servers.
master-max-stations	Displays the maximum number of remote devices (clients) that a management center (server) can manage at one time.
master-port	Displays the UDP listening ports in the event that the device is acting as server (management center).
method	Displays the configured operating mode (normal or trigger).
mode	Displays TIDP protocol device behavior (client or server).

Example:

```
TIDP config>list all
Current TIDP Mode: client
Current TIDP Method: trigger
There are no TIDP master ports
```

```
Max number of routers a TIDP master can manage: 32
ID  Station IP address  Dst Port     Not.Time   Prot  Dial  Caller-List
    Source IP address   Src Port     Licence
--  ------------------  --------  ------------  ----  ----  -----------
 1  10.254.254.254        45670      10 s. 0ms  UDP   on         0
    0.0.0.0               45670      on

Caller-List Id     Calling Number
--------------     --------------------
      2            1234567
                   91+
                   734+
      11           1234567
                   9876543
TIDP config>
```

2.3.5 MASTER-MAX-STATIONS

Establishes the maximum number or remote devices (clients) that a management station (server) can manage at one time. The default value of this parameter is 32, with valid values ranging from 1 to 240.

Syntax:

```
TIDP config>master-max-stations <maximum number of managed clients>
```

Example:

```
TIDP config>master-max-stations 128
TIDP config>
```

2.3.6 MASTER-PORT

Configures the listening ports in a server. The server listens for TIDP packets on the configured ports. Owing to the TIDP protocol function, the server also listens for UDP packets on the ports that are next to the configured port. The said port is shown as the auxiliary port when viewing the configuration through the **LIST MASTER-PORT** command.

Syntax:

```
TIDP config>master-port <listening port>
```

Example:

The server must listen for TIDP packets on ports 45670 and 55212. Ports 45671 and 55213 are automatically configured as listening ports.

```
TIDP config>master-port 45670
TIDP config>master-port 55212
TIDP config>list master-port
TIDP Port  Aux. Port
---------  ---------
  45670      45671
  55212      55213

TIDP config>
```

2.3.7 METHOD

Configures TIDP operating mode for remote devices (client).

Syntax:

```
TIDP config>method
  normal     Normal method
  trigger    Trigger method
```

normal	Normal operating mode. Notification messages are sent periodically from startup.
trigger	Trigger operating mode. Notification messages are only sent when triggered by an event. Furthermore, only ten notification messages are sent. They are sent in accordance with the DISCOVER-STATION <id> TIMER parameter.

Example:

```
TIDP config>method trigger
TIDP config>
```

2.3.8 MODE

Configures the device to act as client (remote device) or server (management center).

Syntax:

```
TIDP config>>mode
  client    Client mode
  server    Server mode
TIDP config>?
```

client	Configures the device as client (remote device).
server	Configures the device as server (management center).

Example:

```
TIDP config>mode server
TIDP config>
```

2.3.9 NO

Allows you to delete part of the configuration or reset some of the parameters to their default settings.

Syntax:

```
TIDP config>no ?
  caller-list <id>           Delete a calling number from a list or a complete
                             caller-list
  discovery-station <id>     Delete a discovery station
  master-max-stations        Set default value to max number of routers a TIDP
                             master can manage
  master-port <port>         Delete a master port
```

caller-list	Deletes a pre-configured list of wake up phone numbers.
discovery-station	Deletes communication information with a server.
master-max-stations	Restores the default value of the maximum number of remote devices (clients) that a management center (server) can manage at one time. The default value is 32.
master-port	Removes a listening port from a device operating as a server.

Example:

Deletes the phone number list with identifier 2.

```
TIDP config>list caller-list
Caller-List Id     Calling Number
--------------     --------------------
      2            1234567
                   91+
                   734+
      11           1234567
                   9876543
TIDP config>no caller-list 2
TIDP config>list caller-list
Caller-List Id     Calling Number
--------------     --------------------
      11           1234567
                   9876543

TIDP config>
```

2.3.10 EXIT

Exits the TIDP configuration menu.

Syntax:

```
TIDP config>exit
```

Example:

```
TIDP config>exit
Config>
```

2.4 Configuration Example

In this chapter we will show the configuration of a client and a server using TIDP to communicate with each other. The server listens on port 45560 and its IP address is 10.254.254.254. The client is configured with trigger mode, GPRS wake-up on calls to phone number 9876543, source port 45550.

2.4.1 Server configuration (management center)

```
TIDP config>; management center

TIDP config>mode server
TIDP config>; listening in port 45560

TIDP config>master-port 45560
TIDP config>
```

2.4.2 Client configuration (remote device)

```
TIDP config>; remote device

TIDP config>mode client
TIDP config>; trigger mode

TIDP config>method trigger
TIDP config>; management station

TIDP config>; IP address 10.254.254.254

TIDP config>discovery-station 1 ip 10.254.254.254
TIDP config>; destination port 45560

TIDP config>discovery-station 1 port 45560
TIDP config>; source port 45550

TIDP config>discovery-station 1 source port 45550
TIDP config>; wakeup telephone number 9876543

TIDP config>caller-list 1 9876543
TIDP config>discovery-station 1 caller-list 1
TIDP config>; activates the send license information

TIDP config>send-licence
```

Chapter 3 TIDP Monitoring

3.1 Accessing monitoring

To access TIDP protocol monitoring, type the **FEATURE IP-DISCOVERY** command in the main monitoring menu.

```
*monitor
Console Operator
+feature ip-discovery
-- TIDP client Console --
TIDP+
```

You enter the same commands if the device is running in server mode but the pull-down menu is different. The welcome message and text prompts show the changes very clearly.

```
*monitor
Console Operator
+feature ip-discovery
-- TIDP server Console --
TIDPm+
```

3.2 Remote device monitoring (client)

With the device running in client mode, you can display the different protocol operating parameters or manually wake-up one or various connections (by simulating the arrival of a call to a phone number). The various available monitoring commands are detailed below.

Command	Function
? (HELP)	Displays the monitoring commands or the subcommand options.
LIST	Displays the TIDP protocol operating information.
WAKE-UP	Manually wakes up connections associated with a phone number.
EXIT	Exits the TIDP monitoring menu.

3.2.1 ? (HELP)

Displays the monitoring commands or the subcommand options.

Syntax:

```
TIDP+?
```

Example:

```
TIDP+?
  list       Show TIDP monitoring information
  wake-up    Wake-up connections associated to a telephone number
  exit
TIDP+
```

3.2.2 LIST

Displays TIDP protocol operating information.

```
TIDP+list ?
  all                 All the elements
  discovery-station   Discovery station (server)
  message-stats       Statistics of TIDP packets
  status              TIDP protocol status
TIDP+
```

3.2.2.1 LIST ALL

Displays all the TIDP protocol operating information.

3.2.2.2 LIST DISCOVERY-STATION

Displays status information on the configured connections with management stations.

Syntax:

```
TIDP+list discovery-station
```

Example:

```
TIDP+list discovery-station
Discovery Stations
==================
Station ID  IP address       Status    Mng  Caller-List
----------  ---------------  --------  ---  -----------
         1  172.24.78.100    DISABLED. 000  1234453
                                            34234+
TIDP+
```

The following information is displayed for each station:

Station ID	Identifier of the connection to the server. This identifier is the same one used in the configuration to create the connection.
IP Address	Destination IP address, i.e., the server IP address.
Status	TIDP protocol connection status. This can be ENABLED or DISABLED.
Mng	This parameter acts as a counter when the client is being managed. It indicates how many notification messages have yet to be sent before the device is no longer considered managed and *management messages* stop being sent. The counter is reset to zero each time a *management-request message* is received.
Caller-List	Phone numbers that wake up the TIDP connection.

3.2.2.3 LIST MESSAGE-STATS

Displays statistics on all the different types of sent and received TIDP packets and error packets. The statistics are displayed per server.

Syntax:

```
TIDP+list message-stats
```

Example:

```
TIDP+list message-stats
Discovery Station ID:          1   IP Address: 172.24.78.100
   Number of Notification messages sent.....................:         5
   Number of Management messages sent.......................:         0
   Number of Notification-Request messages received.........:         0
   Number of Management-Request messages received...........:         0
   Number of Notification messages left.....................:        10
   Number of messages with unknown version number received:           0
   Number of messages with wrong type received..............:         0
   Number of messages with unknown type received............:         0
   Number of messages with wrong HMAC received..............:         0

TIDP+
```

3.2.2.4 LIST STATUS

Displays the TIDP protocol status: ENABLED or DISABLED.

Syntax:

```
TIDP+list status
```

Example:

```
TIDP+list status
TIDP Status: ENABLED.

TIDP+
```

3.2.3 WAKE-UP <TELEPHONE>

Simulates the arrival of a call, which wakes up the corresponding configured TIDP connections.

Syntax:

```
TIDP+wake-up <telephone>
```

Example:

```
TIDP+wake-up 453
TIDP+
```

3.2.4 EXIT

Exits the TIDP monitoring menu.

Syntax:

```
TIDP+exit
```

Example:

```
TIDP+exit
+
```

3.3 Management center (server) monitoring

When the device is running in server mode, you can initiate remote device management manually, cancel remote device management and display TIDP protocol status information. The different monitoring commands available are shown below:

Command	Function
? (HELP)	Displays monitoring commands or subcommand options.
ADD	Initiates remote device management.
DELETE	Finalizes remote device management.
LIST	Displays the TIDP protocol operating information.
RESET	Sends the reset command to a remote device.
EXIT	Exits the TIDP monitoring menu.

3.3.1 ? (HELP)

Displays monitoring commands or subcommand options.

Syntax:

```
TIDPm+?
```

Example:

```
TIDPm+?
  add       Start management process for a specified client
  delete    End management process for a specified client
  list      Show TIDP monitoring information
  reset     Send a reset command to a remote device
  exit
TIDPm+
```

3.3.2 ADD

Initiates the remote device management process.

```
TIDPm+add ?
  hostname    Specify remote device by its hostname
  serial      Specify remote device by its serial number
TIDPm+
```

3.3.2.1 ADD HOSTNAME <HOSTNAME>

Initiates the management process on a remote device identified by its name (hostname).

Syntax:

```
TIDPm+add hostname <hostname>
```

Example:

Initiating management on the remote device named TELDAT_10232:

```
TIDPm+add hostname TELDAT_10232
TIDPm+
```

3.3.2.2 ADD SERIAL <SERIAL_NUMBER>

Initiates the management process on a remote device identified by its serial number.

When the remote device is a router and the number following the '/' character in the serial number is greater than 99999, this number must be written in hexadecimal format and the '/' character must be replaced with 'x'.

Devices with serial numbers containing more than ten characters cannot be managed.

Syntax:

```
TIDPm+add serial <serial_number>
```

Example 1:

Initiating management on the remote device with serial number 427/00127:

```
TIDPm+add serial 427/00127
TIDPm+
```

Example 2:

Initiating management on the remote device with serial number 427/109052:

```
TIDPm+add serial 427x1A9FC
TIDPm+
```

3.3.3 DELETE

Finalizes the remote device management process.

```
TIDPm+delete ?
  all          All the elements
  hostname     Specify remote device by its hostname
  serial       Specify remote device by its serial number
TIDPm+
```

3.3.3.1 DELETE ALL

Finalizes the management process on all managed remote devices.

Syntax:

```
TIDPm+delete all
```

Example:

```
TIDPm+delete all
TIDPm+
```

3.3.3.2 DELETE HOSTNAME <HOSTNAME>

Finalizes remote device management on a device identified by its name (hostname).

Syntax:

```
TIDPm+delete hostname <hostname>
```

Example:

Finalizing the management process on the remote device named TELDAT_10232:

```
TIDPm+delete hostname TELDAT_10232
TIDPm+
```

3.3.3.3 DELETE SERIAL <SERIAL_NUMBER>

Finalizes the management process on a remote device identified by its serial number.

If the remote device is a router and the number that comes after the '/' character in the serial number is greater than 99999, that number must be written in hexadecimal format and the '/' character replaced with 'x'.

Syntax:

```
TIDPm+delete serial <serial_number>
```

Example 1:

Finalizing management on the remote device with serial number 427/00127:

```
TIDPm+delete serial 427/00127
TIDPm+
```

Example 2:

Finalizing management on the remote device with serial number 427/109052:

```
TIDPm+delete serial 427x1A9FC
TIDPm+
```

3.3.4 LIST

Displays TIDP protocol operating information.

```
TIDPm+list ?
  all                   All the elements
  master-port           Status of listening ports in server
  max-stations          Maximum number of clients that can be managed
  message-stats         Statistics of TIDP packets
  router-management     Status of the remote managed devices
  status                TIDP protocol status
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```

3.3.4.1 LIST ALL

Displays all TIDP protocol operating information.

3.3.4.2 LIST MASTER-PORT

Displays the status of the server listening ports.

Syntax:

```
TIDPm+list master-port
```

Example:

```
TIDPm+list master-port
Master Ports
============
TIDP Port  Aux. Port  Status
---------  ---------  ------
  45560      45561    ACTIVE

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```

The information displayed for each station is as follows:

TIDP Port	Port configured to listen for TIDP packet reception.
Aux. Port	Port next to the TIDP port. This port automatically listens for TIDP packet recep-

	tion.
Status	Status of the ports. Port status is either ACTIVE, the server is listening on the ports, or DEAF (inactive), the server is not listening.

3.3.4.3 LIST MAX-STATIONS

Displays the maximum number of remote devices (clients) that can be managed by the management center at any one time.

Syntax:

```
TIDPm+list max-stations
```

Example:

```
TIDPm+list max-stations
Max number of routers a TIDP master can manage: 128

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```

3.3.4.4 LIST MESSAGE-STATS

Displays statistics on TIDP packets received with errors in each listening port pair.

Syntax:

```
TIDPm+list message-stats
```

Example:

```
TIDPm+list message-stats
Master Port: 45560
   Number of messages with unknown version number received:         0
   Number of messages with wrong type received.............:         0
   Number of messages with unknown type received...........:         0
   Number of messages with wrong HMAC received.............:         0

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```

3.3.4.5 LIST ROUTER-MANAGEMENT ALL/ERROR/HOSTNAME <HOSTNAME>/ SERIAL <SERIAL_NUMBER>

Displays the status of remote managed devices. You can specify the hostname or the serial number. You can also choose to display only those devices with errors.

Syntax:

```
TIDPm+list router-management all|error|hostname <hostname>|serial <serial_number>
```

Example:

```
TIDPm+list router-management all
Router hostname.:
   Status.......: WAITING
   IP address...: 0.0.0.0
   Payload IP...: 172.24.76.234
   Serial number: 427/00127
   Management identifier[type]: console[manual]
   Management remaining time..: 41 min.
   Notification messages......: 0
   Management messages........: 0
   Management messages ack....: 56
   Error status...............: (0)No error

TIDPm+list router-management hostname 001731DEB415
Router hostname.: 001731DEB415
   Status.......: MANAGING
   IP address...: 12.0.0.220
   Payload IP...: 172.24.76.234
   Serial number:
```

```
   Management identifier[type]: console[manual]
   Sequence number............: 26738
   Management remaining time..: 51 min.
   Notification messages......: 56
   Management messages........: 168
   Management messages ack....: 56
   Error status...............: (0)No error

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```

The information displayed for each remote device is as follows:

Router hostname:	remote device name (*hostname*).
Status:	management status. The possible states are:

- INITIAL: management process initial state.
- WAITING: management process started but not complete.
- MANAGING: remote device is being managed.
- RESETING: sends a reset command to the remote device.

IP Address	Remote device's IP address. This is the address detected in the IP header of the packets that reach the master.
Payload IP	TIDP packet payload IP address. This is the remote device's local address. If there is NAT in the path between the remote and the master, this address is different from the previous *IP Address*.
Serial Number	Remote device's serial number. If the device is a router and its serial number contains an 'x' rather than a '/', the number that follows will be in hexadecimal format.
Management identifier [type]	Alphanumerical string identifying the management process. This usually consists of text describing the management station that is initiating the management process. The information in square brackets shows whether a manual or automated process has been used to initiate management.
Management remaining time	This is the amount of time during which the device is managed if the order to manage the device is not refreshed. Remote device management is automatically cancelled when this time is up.
Notification messages	Notification messages received from when the device began to be managed.
Management messages	Management messages received from when the device began to be managed.
Management ack	Whenever the remote device receives a *Management Request*, it sends an acknowledgement in the next *Notification message* to confirm receipt of the request and increases this counter.
Error status	Indicates the type of error detected when the remote device is being managed.

3.3.4.6 LIST STATUS

Displays the TIDP protocol status: ENABLED or DISABLED.

Syntax:

```
TIDPm+list status
```

Example:

```
TIDPm+list status
TIDP Status: ENABLED.

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```

3.3.5 RESET HOSTNAME <HOSTNAME>/SERIAL <SERIAL_NUMBER>

Initiates the process of issuing a remote device with a reset command (*Reset-Request Message*). A *Management-Request* message is sent to the remote device after the reset command has been sent.

If the remote device is a router, the *Reset-Request* message has no effect.

Syntax:

```
TIDPm+reset hostname <hostname>|serial <serial_number>
```

When sending a reset command to a remote device you can choose to identify the device by its name (hostname) or by its serial number.

Example 1:

Initiating the management process on the remote device named TELDAT_10232:

```
TIDPm+reset hostname TELDAT_10232
TIDPm+
```

Example 2:

Initiating the management process on the remote device with serial number 427/00127:

```
TIDPm+reset serial 427/00127
TIDPm+
```

3.3.6 EXIT

Exits the TIDP monitoring menu.

Syntax:

```
TIDPm+exit
```

Example:

```
TIDPm+exit
+
```