

UE NITZ Display: Network Identity and Time Zone

Table 1: Feature History

Feature Name	Release Information	Description
NITZ Display	2024.04.0	The Network Identity and Time Zone Display (NITZ) feature enables the AMF to deliver the network name and time zone information to the UE. This feature ensures that UE receives accurate network name and time zone data, crucial for network operations and user experience. Command introduced: **network-name { short** *short_network_name* **| full** *full_network_name* **}**— Used to configure short and full network name under TAI-group and TAI-list level. **Default Setting**: Disabled – Configuration Required

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UE NITZ Display: Feature Description

The NITZ feature supports the following attributes:

- Full Network Name: The complete name of the network.
- Short Network Name: An abbreviated version of the network name.
- Local Time Zone: The time zone specific to the local area.

- Universal Time Zone: The Coordinated Universal Time (UTC) zone.
- Network Daylight Saving Time: Information about daylight saving time adjustments.

The NITZ information is sent to the UE by AMF as a part of UeConfigurationUpdate messages. NITZ UeConfigurationUpdate messages are triggered under specific conditions, such as:

- Initial Registration: When a UE registers with AMF for the first time.
- Mobility Registration with AMF Change: When a UE moves and changes its AMF.
- Periodic Registration or Local Mobility: Only if the configuration has changed since the last update to the UE.
- Other Trigger Reasons: Such as slice change, where NITZ information is included and has changed since the last update.

The Time zone IE indicates the local time zone of the network. This information needs to be included in several types of messages exchanged between different network functions to ensure that the UE and the network are synchronized in terms of time zone information. Time zone IE is filled in the applicable messages towards SMF/PCF/AMF.

Note

- In the UeConfigurationUpdate message, all NITZ-related IEs (full name, short name, local TZ, Universal TZ, DST) are updated even if only one IE has changed. For example, if the full network name changes but the short name stays the same, the AMF still updates both IEs in the next UeConfigUpdate for NITZ.
- Once NITZ parameters are configured or changed, they are not immediately pushed to all existing registered UEs. NITZ information is updated during the next registration or as part of a UeConfigurationUpdate triggered by any other reasons.

NITZ Configuration

You can configure the NITZ parameters at TAI-group and TAI-list level.

Note Configurations at TAI-list level takes the precedence and in the absence of TAI-list level configuration, TAI-group level configurations are considered.

Configure Timezone and DST at TAI-Group and TAI-list Level

The flexibility of configuring timezone and Daylight Saving (DST) at TAI-group and TAI-list level allows the AMF to serve areas that have daylight savings time different than that of the AMF. Use this procedure to set the timezone and daylight saving parameters at the TAI-group and TAI-list level.

Procedure

Step 1 Enter the configuration mode.

config

Example:

```
[amf] amf# config
```

Step 2 Configure the TAI-group with the specified name.

tai-group name *tai_group_name*

Example:

```
[amf] amf(config)# tai-group name tai_group1)#
```

Step 3 Set the timezone for the TAI-group. Specify the offset in hours and optionally in minutes or daylight savings time increment.

timezone offset { + | - } hours *value* **[minutes { 0 | 15 | 30 | 45 } | daylight { 0 | 1 | 2 }]**

Specify the offset from UTC in hours. Accepted value must be an integer between 0—14.

Example:

```
[amf] amf(config-tai-group-tai_group1)# timezone offset + hours 2 minutes 30 daylight
1
```

Step 4 Configure the TAIs with the specified name.

tais { name *tai_list_name* **| range** *range* **}**

Example:

```
[amf] amf(config)# tais name tai_list1)#
```

Step 5 Set the timezone for the TAI-list. Specify the offset in hours and optionally in minutes or daylight savings time increment.

timezone offset { + | - } hours *value* **[minutes { 0 | 15 | 30 | 45 } | daylight { 0 | 1 | 2 }]**

Specify the offset from UTC in hours. Accepted value must be an integer between 0—14.

Example:

```
[amf] amf(config-tais-tai_list1)# timezone offset + hours 2 minutes 30 daylight 1
```

Step 6 Save and commit the configuration.

Configure Network Name at TAI-Group and TAI-list Level

The network name can be configured for both short and long names. While there's no specific upper limit for the "Network Name," it must fit within the maximum L3 message size as per 3GPP spec 44.006, Section 8.8.5. This configuration populates the short and long network name IEs in the UE Configuration Update message from the AMF. There is no default configuration; if not set at the TAI-group or TAI-list level, no network name is passed on to the UE Configuration Update message.

Procedure

Step 1 Enter the configuration mode.

config

Example:

```
[amf] amf# config
```

Step 2 Configure the TAI-group with the specified name or range.

tai-group name *tai_group_name*

Example:

```
[amf] amf(config)# tai-group name tai_group1)#
```

Step 3 Assign a network name to the TAI group. You can specify a full name and a short name for the network.

network-name { short *short_network_name* **| full** *full_network_name* **}**

Example:

```
[amf] amf(config-tai-group-test1)# network-name full example-name1 short example-name2
```

Step 4 Configure the TAIs with the specified name.

tais name *tai_list_name*

Example:

```
[amf] amf(config)# tais name tai_list1)#
```

Step 5 Assign a network name to the TAIs. You can specify a full name and a short name for the network.

network-name { short *short_network_name* **| full** *full_network_name* **}**

Example:

```
[amf] amf(config-tai-list-test1)# network-name full example-name1 short example-name2
```

Step 6 Save and commit the configuration.

Verify NITZ Configuration

Use the **show running-config tai-group** command to verify the supported features for NITZ.

Following is an example output of the **show running-config tai-group** command.

```
show running-config tai-group
tai-group name test1
 timezone offset + hours 2 minutes 15 daylight 1
 network-name full example-name1 short example-name2
 tais name tailist1
  timezone offset - hours 4 minutes 30 daylight 1
  network-name short example-name2
  ims-voice-over-ps-supported true
```

```
  mcc 123 mnc 456
   tac list [ 10 20 30 ]
 tais name tailist2
  ims-voice-over-ps-supported true
  mcc 123 mnc 456
   tac list [ 40 50 60 ]
  exit
 exit
exit
```