

NOA Modification on the Cisco PGW 2200 Softswitch

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Introduction

Prerequisites

Requirements

Components Used

Conventions

NOA Modification for a Cisco PGW 2200 in Call Control Mode

New Features in Cisco PGW 2200 Release 9.4(1)

NOA Modification for a Cisco PGW 2200 in Signalling Mode

Related Information

Introduction

This document describes the Signaling System 7 (SS7) nature of address (NOA) modification for a Cisco PGW 2200 Softswitch that is working either in Call Control or Signaling mode. A Cisco PGW 2200 user might need to change the NOA value to a value that is appropriate to the network of the customer. The PGW 2200 Generic Analysis module can change the NOA value.

Prerequisites

Requirements

Readers of this document should have knowledge of these topics:

- Cisco Media Gateway Controller Software Release 9 Documentation
- Configurable NOA Mapping [PGW 2200 release 9.4(1)]
- Cisco Media Gateway Controller Software Release 9 Dial Plan Guide
- NOA and NPI Codes

Components Used

The information in this document is based on Cisco PGW 2200 Release 9.4(1) and later.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

For more information on document conventions, refer to the Cisco Technical Tips Conventions.

NOA Modification for a Cisco PGW 2200 in Call Control Mode

This sections provides an example of the modification of the NOA number for a Cisco PGW 2200 in Call Control mode. There are a number of options for changes to the NOA fields; this example shows how to change the NOA number to 4, which is the international ISDN User Part (ISUP) calling format.

1. On the Cisco PGW 2200, issue the **mml** command.

```
mgcusr@PGW2200a% mml
```

```
Copyright © 1998-2002, Cisco Systems, Inc.
```

```
PGW2200a mml>
```

2. Issue this series of commands:

```
PGW2200a mml> prov-sta::srcver="active",dstver="noal"
```

```
MGC-01 - Media Gateway Controller 2004-08-02 18:15:26.112 MET
M  COMPLD
   "PROV-STA"
   ;
```

```
PGW2200a mml> numan-add:dialplan:custgrpid="0001", OVERDEC="YES"
```

```
MGC-01 - Media Gateway Controller 2004-08-02 18:15:30.724 MET
M  COMPLD
   "dialplan"
   ;
```

```
PGW2200a mml> numan-add:resultset:custgrpid="0001",name="gonoa"
```

```
MGC-01 - Media Gateway Controller 2004-08-02 18:15:53.781 MET
M  COMPLD
   "resultset"
   ;
```

```
PGW2200a mml> numan-add:resulttable:custgrpid="0001",name="setnoa",
               resulttype="B_NUMBER_TYPE",dwl="5",setname="gonoa"
```

```
!-- Note: Issue that command on one line.
```

```
MGC-01 - Media Gateway Controller 2004-08-02 18:20:35.039 MET
M  COMPLD
   "resulttable"
   ;
```

```
PGW2200a mml> numan-add:resulttable:custgrpid="0001",name="setnoaa",
               resulttype="A_NUMBER_TYPE",dwl="5",setname="gonoa"
```

```
!-- Note: Issue that command on one line.
```

```
MGC-01 - Media Gateway Controller 2004-08-02 18:20:35.100 MET
M  COMPLD
   "resulttable"
   ;
```

```
PGW2200a mml> prov-cpy
```

```
MGC-01 - Media Gateway Controller 2004-08-02 18:27:26.643 MET
M  COMPLD
   "PROV-CPY"
   ;
```

Note: Check the custgrpid value binding to the signal path or trunk group:

- PGW 2200 in Signaling (Nailed) mode Issue the **prov-rtrv:ss7path:name="ss7-path-name"** command in order to change it, and look for the custgrpid value.
- PGW 2200 in Call Control (Switched) mode Issue the **prov-rtrv:trnkgrp:name="trunk-group-number"** command in order to change it, and look for the custgrpid value.

New Features in Cisco PGW 2200 Release 9.4(1)

Redirection Number Modification and Advanced A-Number(s) Normalization

Refer to Redirection Number Modification and Advanced A-Number(s) Normalization for more information.

This feature gives the user of a Cisco PGW 2200 the ability to modify the Redirecting number and its NOA as a result of any analysis phase (Pre-analysis, A/B number analysis, or Cause analysis). Pre-analysis consists of these stages, which are processed in this order:

1. NOA and number plan identification (NPI) for Calling Number
2. calling party category (CPC)
3. transmission medium requirement (TMR)
4. NOA and NPI for Called Number
5. transmission network systems (TNS)

All of these main stages can generate an R_NBR_TYPE modification result. Any stage that provokes this result will deliver the new Redirecting number NOA as input to the next stage. This is allowed, and it means that you could modify at each stage, and then the final value of the NOA would be the one that is taken from the last occurrence of the result. When you provision, you must keep in mind that there is an order to Pre-analysis (as above). Suppose that you first provision a bnoa entry to modify the Redirecting NOA, and you then provision an anoa entry to do the same. When the call is processed, the anoa is applied first, and then the bnoa is applied. Thus, it is not dependent on the last one provisioned; it is dependent on the fixed order in which each pre-analysis stage is processed.

Configurable NOA Mapping

Refer to Configurable NOA Mapping.

In the ITU Q.763 specification, NOA values 6 through 111 are designated as spare. There is a general understanding that the spare designation can be interpreted as free to use. As a result, large ranges of these values are in use in different countries.

For this reason, in Cisco PGW 2200 Release 9.4(1) and later, a new feature is introduced: configurable NOA mapping with the Line Number Translation (LINEXALTE) feature for NOA.

NOA Modification for a Cisco PGW 2200 in Signalling Mode

This section explains the modification of the NOA number for a Cisco PGW 2200 in Signaling mode. For this scenario you have two solutions. You can use the Signalling solution on the Cisco PGW 2200 as explained above. If this scenario is too complex, then refer to Using IOS Translation Rules on the Cisco gateway, to change the values. This is an example of a change to the NOA on the gateway that changes all calls to a national subscriber plan:

```
voice translation-rule 1
rule 1 /^.*\/ /\1/ type any subscriber plan any national
!
voice translation-profile type-plan
```

```
translate calling 1
translate called 1
!
dial-peer voice 100 pots
translation-profile outgoing type-plan
destination-pattern 991....
forward-digits all
```

Be aware that, since Cisco IOS® Software Release 12.3T, some modifications to the IOS code have been made to check the plan and type rules. For example, in Cisco IOS Software Release 12.3(7)T, the ISDN stack validates the plan and type, to ensure that it is a valid combination before it is sent out. For all invalid combinations, the ISDN stack will rewrite the plan or type. For this IOS code, Cisco has added more checks in the system, to ensure adherence to the primary NI specifications. According to those specification, the plan and type are set according to the length of dialed digits. This causes problems with other SS7 variants that require more digits for National or International scenarios. Thus, there is a new Cisco bug for Cisco IOS Software Release 12.3T [Cisco bug ID CSCee78496 (registered customers only)] for modification to the IOS code, because the plan and type values are not verified to conform to NI2 specification, with the PGW 2200. With this latest Cisco IOS software change, ISDN IOS code does not do any plan or type validations for NI2C when they come from VoIP IOS stack for an outgoing ISDN call. Refer to Cisco bug ID CSCee78496 (registered customers only) to check the First Fixed-in Version field, and use that Cisco IOS Software Release for the Cisco PGW 2200 solution in Signaling mode.

Also, if you have used the `voice translation-rule`, you can test it with the **test voice translation-rule** Cisco IOS software command. You can also test it if you make a call with these debugs and service timestamps added to the configuration:

```
debug isdn q931.

debug translation det

voip ccapi in out
```

You can also use the **isdn map address** command, under the serial interface, to manipulate the plan and type before it gets on the wire. Refer to the Cisco IOS software command-line interface (CLI) commands.

Note: If you need to open a case with Technical Support, to get help with this configuration, run an SS7 sniffer or snoop trace in combination with a PGW 2200 Message Definition Language (MDL) trace and attach them to the Technical Support case.

Related Information

- [Cisco SC 2200 Signaling Controller Configuration Examples](#)
- [Voice Technology Support](#)
- [Voice and Unified Communications Product Support](#)
- [Recommended Reading: Troubleshooting Cisco IP Telephony](#)
- [Technical Support & Documentation – Cisco Systems](#)

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