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AT&T IP Flexible Reach Service Including MIS/PNT/AVPN Transports with Avaya Session Manager 6.0 & Acme Packet 3000-4000 Series SBC

A Technical Application Note



Disclaimer

The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.

Emergency 911/E911 Services Limitations and Restrictions - Although AT&T provides 911/E911 calling capabilities, AT&T does not warrant or represent that the equipment and software (e.g., IP PBX) reviewed in this customer configuration guide will properly operate with AT&T IP Flexible Reach to complete 911/E911 calls; therefore, it is Customer's responsibility to ensure proper operation with its equipment/software vendor.

While AT&T IP Flexible Reach services support E911/911 calling capabilities under certain Calling Plans, there are circumstances when that E911/911 service may not be available, as stated in the Service Guide for AT&T IP Flexible Reach found at <http://new.serviceguide.att.com>. Such circumstances include, but are not limited to, relocation of the end user's CPE, use of a non-native or virtual telephone number, failure in the broadband connection, loss of electrical power, and delays that may occur in updating the Customer's location in the automatic location information database.

Please review the AT&T IP Flexible Reach Service Guide in detail to understand the limitations and restrictions.

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Abstract

This technical application notes defines a SIP configuration model suitable for Oracle's Acme Packet 3000-4000 series Oracle Communications Session Border Controllers connecting Avaya Session Manager 6.0 from a customer premise to AT&T's IP Flexible Reach service with MIS, PNT or AVPN transport. The reference configuration presented was tested in AT&T's labs.

Introduction

This technical application note outlines the recommended configuration for Oracle's Acme Packet 3000-4000 series Session Border Controller (SBC), the industry leading Session Border Controllers, for connecting AT&T's IP Flexible Reach service to Avaya Session Manager 6.0 customers. This document is applicable to Oracle's Acme Packet OS-C versions 6.0 and higher.

Intended Audience

This document is intended for user by Oracle Systems Engineers, Oracle Enterprise Customers and Partners. It assumes that the reader is familiar with basic operations of the SBC.

Support

**The AT&T website is password protected. The ID and Password are provided to each customer when they place an order for IP Flexible Reach or IP Toll Free service.

Design goals

The reference configuration represents the most common SIP to SIP deployment models. Originating SIP traffic and terminating to a SIP provider via the Oracle Communications Session Border Controller. The configuration also supports bi-directional call-flows via Local-Policy routes.

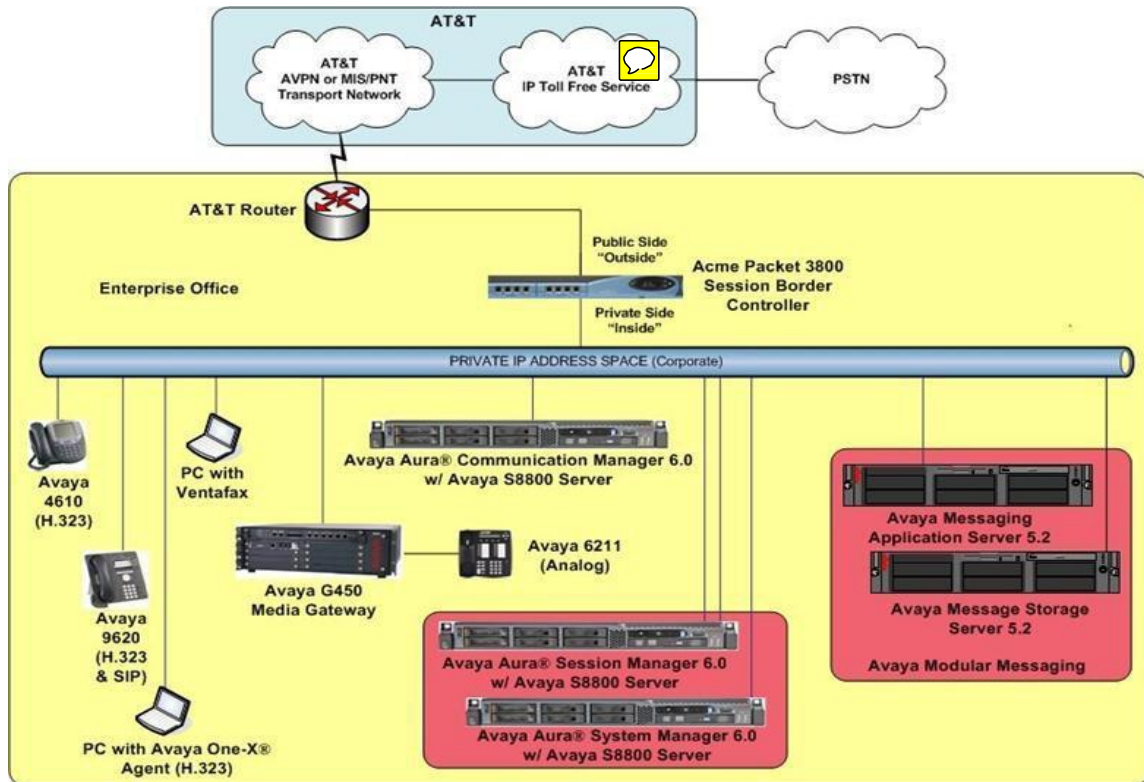
This document will annotate each configuration with information on its general applicability. The intent is to:

- Minimize SIP to SIP interoperability issue's by standardizing field configurations
- Provide guidelines for new users for the Oracle Communications Session Border Controller
- Provide a configuration template, base-lining the SIP to SIP configuration (with accompanying Diagram)
- Flexibility: how resilient the configuration is and how adaptable the configuration is when turning up new SIP to SIP networks.
- Performance: minimize the use of unnecessary configuration objects

Reference Architecture

This section includes a reference architecture diagram, where the Oracle Communications Session Border Controller is integrated as an Enterprise CPE Trunking Session Border Controller, performing SIP between Avaya Session Manager 6.0 in the Enterprise and the AT&T Flexible Reach service.

The Avaya Session Manager peers with the AT&T IP Flexible Reach service via the Oracle Communications Session Border Controller (as depicted below).



Service Requirements

Below is a description of service requirements that must be adhered to for the solution to work as tested.

- If Avaya Aura® Communication Manager receives an SDP offer with multiple codecs, where at least two of the codecs are supported in the codec set provisioned on Avaya Aura® Communication Manager, then Avaya Aura® Communication Manager selects a codec according to the priority order specified in the Avaya Aura® Communication Manager codec set, not the priority order specified in the SDP offer. For example, if the AT&T IP Toll Free service offers G.711, G.729A, and G.729B in that order, but the Avaya Aura® Communication Manager codec set contains G.729B, G.729A, and G.711 in that order, then Avaya Aura® Communication Manager selects G.729A, not G.711. The practical resolution is to provision the Avaya Aura® Communication Manager codec set to match the expected codec priority order in AT&T IP Toll Free SDP offers.
- G.726 codec is not supported between Avaya Aura® Communication Manager and the AT&T IP Toll Free service.

- G.711 faxing is not supported between Avaya Aura® Communication Manager and the AT&T IP Toll Free service. Avaya Aura® Communication Manager does not support the protocol negotiation that AT&T requires to have G.711 fax calls work. T.38 faxing is supported, as is Group 3 and Super Group 3 fax. Fax speeds are limited to 9600 in the configuration tested. In addition, Fax Error Correction Mode (ECM) is not supported by Avaya Aura® Communication Manager.
- Shuffling must be disabled on the Avaya Aura® Communication Manager “local” SIP trunk due to codec negotiation issues with Avaya SIP telephones.
- Avaya Aura® Communication Manager 6.0 inserts a leading plus sign to calling number headers by default (e.g. Update, From, PAI, Contact). The AT&T IP Toll Free service does not support the use of digit strings with a leading plus sign (“+”) in headers containing calling numbers (Update in the case of the inbound only AT&T IP Toll Free service). The SIP-manipulation rules in the Acme Packet 3000/4000 will remove the leading plus sign (“+”) before sending to AT&T’s network.

Notes on Reference Configuration

In the configuration, the Realm labeled INSIDE, and its corresponding SIP Interface address 192.168.67.130, is where the SIP signaling and eventual RTP (when signaling dictates RTP can start), will enter and exit the Oracle Communications Session Border Controller. This address represents the SBC’s SIP Signaling target for the Avaya Session Manager to signal to.

The Realm labeled OUTSIDE and its corresponding SIP Interface address 192.168.64.130, is where all SIP messaging enters and exits the SBC, to and from the AT&T network SIP Peering side.

The Local-Policy configurations route sessions to/from the Avaya SM to AT&T’s network.

NOTE: multiple PBXs can be supported on a common Acme Packet 3000/4000 by adding the following configuration elements for each new platform:

- Realm that faces the new PBX (i.e. INSIDE-new)
 - The same Physical-Interface and Network-Interface may be used
- Realm that faces IP Flexible Reach (i.e. ATT-new)
 - The same Physical-Interface and Network-Interface may be used
- SIP-interface that faces the new PBX (requires a new IP address for SIP-port)
- SIP-interface that faces IP Flexible Reach (requires a new IP address for SIP-port)
- Steering-Pool with the new “PBX facing” IP address and Realm
- Steering-Pool with the new “IP Flexible Reach facing” IP address and Realm
- Local-Policy with Source realm of new “PBX facing” realm and Next-Hop of AT&T facing IP address and Realm name
- Local-Policy with Source realm of new “AT&T facing” realm and Next-Hop of new PBX facing IP address and Realm name
- Session-Agent with new “PBX facing” IP address and Realm name

It should be noted that “platform specific” header manipulation rules and translation-rules should be configured under their respective SIP-INTERFACE rather than on a “global” level. This prevents unnecessary and potentially harmful SIP signaling modifications to the other PBX platforms that could cause certain call flows to fail.

Normative References

- [1] Acme Packet, “Net-Net 4000 S-C6.2.0 ACLI Configuration Guide”, 400-0061-62, Dec 2010.
- [2] Archer, M., “BCP SIP Peering Configuration”, 520-0038-01, Mar 2010

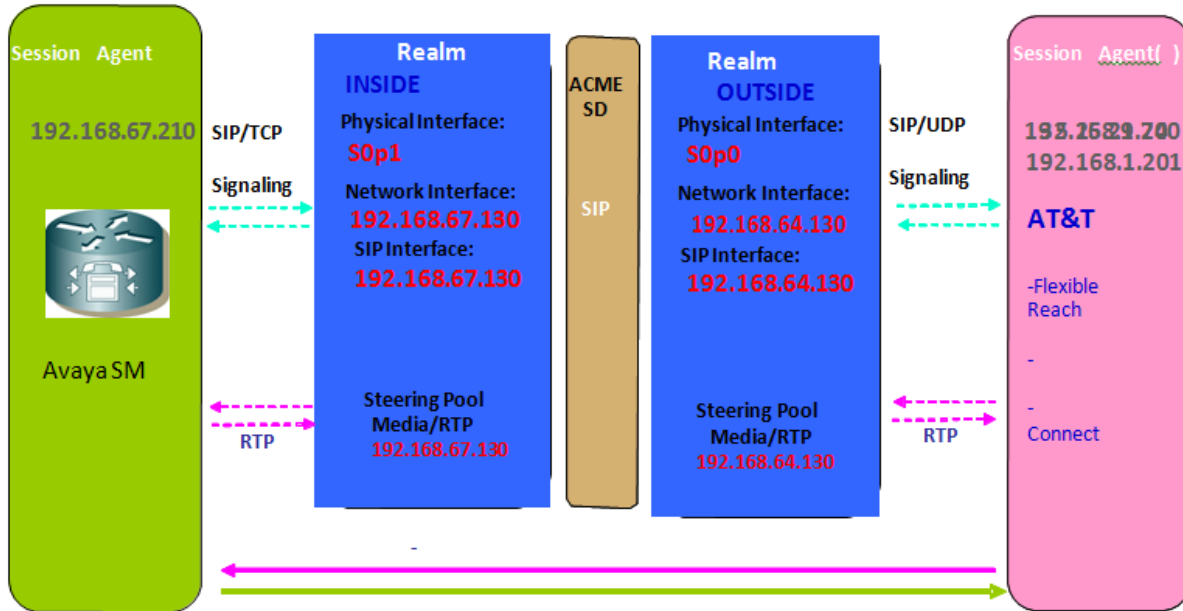
Author’s Address

Nate Denbow
email: nathan.denbow@oracle.com

Oracle
100 Crosby Drive
Bedford, MA 01730

Appendix A: Reference Diagram and Configuration

The Avaya SM peers with the AT&T IP Flexible Reach service via the Oracle Communications Session Border Controller (as depicted below):



NOTE: The configuration elements highlighted in bold red are unique to the Avaya SM solution and must be present to allow for specific SDP manipulation. Further, all references to the (732) digit strings in this document are unique to lab testing and will change on a per-customer basis. Due to a limitation in Microsoft Lync software, a FROM header manipulation rule was designed to replace the URI-USER portion of the From header with a fixed CPN if the original contained ALPHA characters.


```

local-policy *
  from-address *
  to-address *
  source-realm INSIDE
  description
  activate-time N/A
  deactivate-time N/A state
  policy-priority enabled
  last-modified-by none
  last-modified-date admin@console
  policy-attribute 2009-11-05 17:50:26
    next-hop SAG:SP_PROXY
    realm OUTSIDE
    action none
    terminate-recursion disabled
    carrier
    start-time 0000
    end-time 2400
    days-of-week U-S
    cost 0
    app-protocol SIP
    state enabled
    methods
    media-profiles

local-policy *
  from-address *
  to-address *
  source-realm OUTSIDE
  description
  activate-time N/A
  deactivate-time N/A
  state enabled
  policy-priority none
  last-modified-by admin@console
  last-modified-date 2009-11-04 00:56:55
  policy-attribute
    next-hop SAG:ENTERPRISE
    realm INSIDE
    action none
    terminate-recursion disabled
    carrier
    start-time 0000
    end-time 2400
    days-of-week U-S
    cost 0
    app-protocol SIP
    state enabled
    methods
    media-profiles

```

```

media-manager
state enabled
latching enabled
flow-time-limit 86400
initial-guard-timer 300
subsq-guard-timer 300
tcp-flow-time-limit 86400
tcp-initial-guard-timer 300
tcp-subsq-guard-timer 300
tcp-number-of-ports-per-flow 2
hnt-rtcp disabled
algd-log-level NOTICE
mbsd-log-level NOTICE
red-flow-port 1985
red-mgcp-port 1986
red-max-trans 10000
red-sync-start-time 5000
red-sync-comp-time 1000
media-policing enabled
max-signaling-bandwidth 775880
max-untrusted-signaling 80
min-untrusted-signaling 20
app-signaling-bandwidth 0
tolerance-window 30
rtcp-rate-limit 0
min-media-allocation 2000
min-trusted-allocation 4000
deny-allocation 64000
anonymous-sdp disabled
app-msg-bandwidth 32000
fragment-msg-bandwidth 0
rfc2833-timestamp disabled
default-2833-duration 100
rfc2833-end-pkts-only-for-non-sig enabled
translate-non-rfc2833-event disabled
dnsalg-server-failover disabled
last-modified-by admin@console
last-modified-date 2009-11-04 00:34:23

```

```

network-interface
  name wancom1
  sub-port-id 0
  description
  hostname
  ip-address
  pci-utility-addr 169.254.1.1
  sec-utility-addr 169.254.1.2
  netmask 255.255.255.252
  gateway
  sec-gateway
  gw-heartbeat
    state disabled
    heartbeat 0
    retry-count 0
    retry-timeout 1
    health-score 0
  dns-ip-primary
  dns-ip-backup1
  dns-ip-backup2
  dns-domain
  dns-timeout 11
  hip-ip-list ftp-
  address
  icmp-address snmp-
  address telnet-address
  last-modified-by admin@console
  last-modified-date 2009-11-04 00:33:51

```

```

network-interface
  name wancom2
  sub-port-id 0
  description
  hostname
  ip-address
  pci-utility-addr 169.254.2.1
  sec-utility-addr 169.254.2.2
  netmask 255.255.255.252
  gateway
  sec-gateway
  gw-heartbeat
    state disabled
    heartbeat 0
    retry-count 0
    retry-timeout 1
    health-score 0
  dns-ip-primary
  dns-ip-backup1
  dns-ip-backup2
  dns-domain
  dns-timeout 11
  hip-ip-list
  ftp-address icmp-address
  snmp-address
  telnet-address
  last-modified-by admin@console
  last-modified-date 2009-11-04 00:33:51

```

```

network-interface
  name                               s0p0
  sub-port-id                         0
  description hostname

  ip-address                          192.168.64.130
  pri-utility-addr                    192.168.64.131
  sec-utility-addr                    192.168.64.132
  netmask                             255.255.255.0
  gateway                             192.168.64.1
  sec-gateway
  gw-heartbeat
    state                             disabled
    heartbeat                          0
    retry-count                        0
    retry-timeout                      1
    health-score                       0

  dns-ip-primary
  dns-ip-backup1
  dns-ip-backup2
  dns-domain
  dns-timeout                         11
  hip-ip-list                          192.168.64.130

  ftp-address
  icmp-address                        192.168.64.130
  snmp-address telnet-
address
last-modified-by                     admin@console
last-modified-date                   2009-11-06 13:33:09

```

```

network-interface
  name                               s0p1
  sub-port-id                         0
  description hostname
  hostname

  ip-address                          192.168.67.130
  pri-utility-addr                    192.168.67.131
  sec-utility-addr                    192.168.67.132
  netmask                             255.255.255.0
  gateway                             192.168.67.1
  sec-gateway
  gw-heartbeat
    state                             disabled
    heartbeat                          0
    retry-count                        0
    retry-timeout                      1
    health-score                       0

  dns-ip-primary
  dns-ip-backup1
  dns-ip-backup2
  dns-domain
  dns-timeout                         11
  hip-ip-list                          192.168.67.130

  ftp-address                          192.168.67.130
  icmp-address                         192.168.67.130
  snmp-address
telnet-address
last-modified-by                     admin@console
last-modified-date                   2009-11-04 01:40:53

```

```
ntp-config
  server 135.8.139.1
  last-modified-by admin@console
  last-modified-date 2009-11-04 00:27:53

phy-interface
  name s0p1
  operation-type Media
  port 1
  slot 0
  virtual-mac 00:08:25:a0:f3:69
  admin-state enabled
  auto-negotiation enabled
  duplex-mode FULL
  speed 100
  last-modified-by admin@console
  last-modified-date 2009-11-04 00:24:39

phy-interface
  name s0p0
  operation-type Media
  port 0
  slot 0
  virtual-mac 00:08:25:a0:f3:68
  admin-state enabled
  auto-negotiation enabled
  duplex-mode FULL
  speed 100
  last-modified-by admin@console
  last-modified-date 2009-11-04 00:29:41

phy-interface
  name s1p0
  operation-type Media
  port 0
  slot 1
  virtual-mac 00:08:25:a0:f3:6e
  admin-state disabled
  auto-negotiation enabled
  duplex-mode FULL
  speed 100
  last-modified-by admin@console
  last-modified-date 2009-11-04 00:33:23

phy-interface
  name s1p1
  operation-type Media
  port 1
  slot 1
  virtual-mac 00:08:25:a0:f3:6f
  admin-state disabled
  auto-negotiation enabled
  duplex-mode FULL
  speed 100
  last-modified-by admin@console
  last-modified-date 2009-11-04 00:33:23

phy-interface
  name wancom1
  operation-type Control
  port 1
  slot 0
```

```

virtual-mac
wancom-health-score          8
last-modified-by            admin@console
last-modified-date          2009-11-04 00:33:51

phy-interface
name                          wancom2
operation-type                Control
port                          2
slot                          0
virtual-mac
wancom-health-score          9
last-modified-by            admin@console
last-modified-date          2009-11-04 00:33:51

|
realm-config
identifier                    OUTSIDE
description
addc-prefix                  0.0.0.0
network-interfaces
                               s0p0:0
mm-in-realm                  enabled
mm-in-network                 enabled
mm-same-ip                   enabled
mm-in-system                  enabled
bw-cac-non-mm                disabled
msm-release                   disabled
generate-udp-checksum        disabled
max-bandwidth                0
fallback-bandwidth           0
max-priority-bandwidth       0
max-latency                   0
max-jitter                   0
max-packet-loss              0
observe-window-size          0
parent-realm
dns-realm media-policy
in-translationid out-
translationid in-
manipulationid

out-manipulationid           NAT_IP
manipulation-string
class-profile
average-rate-limit           0
access-control-trust-level   medium
invalid-signal-threshold     4
maximum-signal-threshold     3000

```

```

untrusted-signal-threshold      10
nat-trust-threshold             0
deny-period                     60
ext-policy-svc
symmetric-latching             disabled
pai-strip                       disabled
trunk-context
early-media-allow
enforcement-profile
additional-prefixes
restricted-latching            none
restriction-mask                32
accounting-enable               enabled
user-cac-mode                   none
user-cac-bandwidth              0
user-cac-sessions               0
icmp-detect-multiplier          0
icmp-advertisement-interval     0
icmp-target-ip
monthly-minutes                 0
net-management-control          disabled
delay-media-update              disabled
refer-call-transfer             disabled
codec-policy
codec-manip-in-realm           disabled
constraint-name
call-recording-server-id
stun-enable                     disabled
stun-server-ip                  0.0.0.0
stun-server-port                 3478
stun-changed-ip                 0.0.0.0
stun-changed-port               3479
match-media-profiles qos- constraint
last-modified-by                admin@console
last-modified-date              2009-11-04 00:41:24

realm-config
  identifier                     INSIDE
  description
  addc-prefix                     0.0.0.0
  network-interfaces

  mm-in-realm                     s0p1:0
  mm-in-network                   enabled
  mm-same-ip                       enabled
  mm-in-system                     enabled
  bw-cac-non-mm                   disabled
  msm-release                       disabled
  generate-udp-checksum            disabled

```

```

max-bandwidth                                0
fallback-bandwidth                          0
max-priority-bandwidth                      0
max-latency                                  0
max-jitter                                   0
max-packet-loss                             0
observ-window-size                          0
parent-realm dns-realm
media-policy
in-translationid out-translationid
in-manipulationid out-
manipulationid
manipulation-string
class-profile
average-rate-limit                          0
access-control-trust-level                  high
invalid-signal-threshold                   0
maximum-signal-threshold                   0
untrusted-signal-threshold                 0
nat-trust-threshold                         0
deny-period                                 30
ext-policy-svc
symmetric-latching                          disabled
pal-strip                                   disabled
trunk-context early-media-allow
enforcement-profile additional-prefixes
restricted-latching                         none
restriction-mask                            32
accounting-enable                           enabled
user-cac-mode                               none
user-cac-bandwidth                          0
user-cac-sessions                           0
icmp-detect-multiplier                      0
icmp-advertisement-interval                 0
icmp-target-ip                              0
monthly-minutes                             0
net-management-control                      disabled
delay-media-update                          disabled
refer-call-transfer                         disabled
codec-policy
codec-manip-in-realm                        disabled
constraint-name
call-recording-server-id
stun-enable                                 disabled
stun-server-ip                              0.0.0.0
stun-server-port                            3478
stun-changed-ip                             0.0.0.0
stun-changed-port                           3479
match-media-profiles qos-
constraint
last-modified-by                            admin@console

```



```

last-modified-date                2009-11-04 00:49:58

redundancy-config
state                             enabled
log-level                         INFO
health-threshold                  75
emergency-threshold               50
port                              9090
advertisement-time                500
percent-drift                     210
initial-time                      1250
becoming-standby-time            180000
becoming-active-time             100
cfg-port                          1987
cfg-max-trans                    10000
cfg-sync-start-time              5000
cfg-sync-comp-time               1000
gateway-heartbeat-interval        0
gateway-heartbeat-retry           0
gateway-heartbeat-timeout         1
gateway-heartbeat-health          0
media-if-peercheck-time           0

peer
name                               acmesbc-pri
state                             enabled
type                               Primary
destination
    address                        169.254.1.1:9090
    network-interface              wancom1:0
destination
    address                        169.254.2.1:9090
    network-interface              wancom2:0

peer
name                               acmesbc-sec
state                             enabled
type                               Secondary
destination
    address                        169.254.1.2:9090
    network-interface              wancom1:0 |
destination
    address                        169.254.2.2:9090
    network-interface              wancom2:0

```

```

last-modified-by      admin@console
last-modified-date   2009-11-04 00:34:07

session-agent
hostname              135.25.29.74
ip-address            135.25.29.74
port                  5060
state                 enabled
app-protocol          SIP
app-type
transport-method      UDP
realm-id              OUTSIDE
egress-realm-id
description            AT&T_BE
carriers
allow-next-hop-lp    enabled
constraints            disabled
max-sessions           0
max-inbound-sessions  0
max-outbound-sessions 0
max-burst-rate         0
max-inbound-burst-rate 0
max-outbound-burst-rate 0
max-sustain-rate       0
max-inbound-sustain-rate 0
max-outbound-sustain-rate 0
min-seizures           5
min-asr             0
time-to-resume         0
ttx-no-response      0
in-service-period      0
burst-rate-window      0
sustain-rate-window    0
req-uci-carrier-mode  None
proxy-mode
redirect-action
loose-routing          enabled
send-media-session     enabled
response-map
ping-method            OPTIONS;hops=20
ping-interval          60
ping-send-mode         keep-alive
ping-in-service-response-codes
out-service-response-codes
media-profiles
in-translationid
out-translationid
trust-me               disabled
request-uci-headers
stop-recurse local-response-map
ping-to-user-part
ping-from-user-part
li-trust-me           disabled
in-manipulationid out-
manipulationid
manipulation-string p-
asserted-id

```

```

trunk-group
max-register-sustain-rate          0
early-media-allow
invalidate-registrations           disabled
rfc2833-mode                       none
rfc2833-payload                    0
codec-policy
enforcement-profile
refer-call-transfer                disabled
reuse-connections                  NONE
tcp-keepalive                      none
tcp-reconn-interval               0
max-register-burst-rate            0
register-burst-window              0
last-modified-by                   admin@console
last-modified-date                 2009-12-01 14:51:04

session-agent
hostname                           192.168.67.210
ip-address                          192.168.67.210
port                                5060
state                               enabled
app-protocol                        SIP
app-type
transport-method                   staticTCP
realm-id                           INSIDE
egress-realm-id
description                         Session Manager_6_0
carriers
allow-next-hop-ip                  enabled
constraints                         disabled
max-sessions                        0
max-inbound-sessions               0
max-outbound-sessions              0
max-burst-rate                     0
max-inbound-burst-rate             0
max-outbound-burst-rate            0
max-sustain-rate                   0
max-inbound-sustain-rate           0
max-outbound-sustain-rate          0
min-seizures                       5
min-asc                             0
time-to-resume                     0
ttr-no-response                    0
in-service-period                  0
burst-rate-window                  0
sustain-rate-window                0
req-uri-carrier-mode               None
proxy-mode
redirect-action

```

```

loose-routing                enabled
send-media-session          enabled
response-map
ping-method                  OPTIONS;hops=0
ping-interval                60
ping-send-mode               keep-alive
ping-in-service-response-codes out-service-
response-codes media-profiles
in-translationid out-translationid
trust-me                     disabled
request-uri-headers
stop-recurse
local-response-map ping-to-user-part
ping-from-user-part
li-trust-me                  disabled
in-manipulationid
out-manipulationid manipulation-
string p-asserted-id
trunk-group
max-register-sustain-rate   0
early-media-allow
invalidate-registrations    disabled
rfc2833-mode                none
rfc2833-payload             0
codec-policy
enforcement-profile
refer-call-transfer         disabled
reuse-connections           TCP
tcp-keepalive               none
tcp-reconn-interval         0
max-register-burst-rate     0
register-burst-window        0
last-modified-by            admin@console
last-modified-date          2009-11-04 00:54:44

session-group
group-name                   SP_PROXY
description
state                         enabled
app-protocol                  SIP
strategy                       RoundRobin
dest

```

```

135.25.29.74

trunk-group
sag-recursion disabled
stop-sag-recurse 401,407
last-modified-by admin@console
last-modified-date 2009-12-04 20:10:41

session-group
group-name ENTERPRISE
description
state enabled
app-protocol SIP
strategy Hunt
dest
192.168.67.210

trunk-group
sag-recursion disabled
stop-sag-recurse 401,407
last-modified-by admin@console
last-modified-date 2009-11-05 17:52:47

sip-config
state enabled
operation-mode dialog
dialog-transparency enabled
home-realm-id INSIDE
egress-realm-id INSIDE
nat-mode None
registrar-domain
registrar-host
registrar-port 0
register-service-route always
init-timer 500
max-timer 4000
trans-expire 32
invite-expire 180
inactive-dynamic-conn 32
enforcement-profile
pac-method
pac-interval 10
pac-strategy PropDist
pac-load-weight 1
pac-session-weight 1
pac-route-weight 1

```

```

pac-callid-lifetime      600
pac-user-lifetime       3600
red-sip-port            1988
red-max-trans           10000
red-sync-start-time     5000
red-sync-comp-time      1000
add-reason-header       disabled
sip-message-len         4096
enum-sag-match          disabled
extra-method-stats      enabled
registration-cache-limit 0
register-use-to-for-ld   disabled
options                 max-udp-length=0
                        set-inv-exp-at-100-resp
add-ucid-header         disabled
last-modified-by        admin@console
last-modified-date      2009-11-04 00:34:23

```

```

sip-feature
  name                    Replaces
  realm
  support-mode-inbound    Pass
  require-mode-inbound    Pass
  proxy-require-mode-inbound Pass
  support-mode-outbound   Pass
  require-mode-outbound   Pass
  proxy-require-mode-outbound Pass
  last-modified-by        admin@console
  last-modified-date      2010-03-11 15:51:36

```

```

sip-interface
  state                    enabled
  realm-id                 OUTSIDE
  description
  sip-port
    address                192.168.64.130
    port                   5060
    transport-protocol     UDP
    tls-profile
    allow-anonymous        agents-only
    ims-aka-profile
  carriers
  trans-expire             0
  invite-expire            0
  max-redirect-contacts    0
  proxy-mode redirect-action
  contact-mode             none
  nat-traversal            none
  nat-interval             30

```

```

tcp-nat-interval registration-          90
caching min-reg-expire                 disabled
                                         300
registration-interval route-           3600
to-registrar secured-network           disabled
teluri-scheme                          disabled
uri-fqdn-domain                        disabled

trust-mode                              all
max-nat-interval                       3600
nat-int-increment                      10
nat-test-increment                    30
sip-dynamic-hnt                        disabled
stop-recurse                           401,407
port-map-start                          0
port-map-end                            0

in-manipulationid                      disabled
out-manipulationid
manipulation-string
sip-ims-feature                        disabled
operator-identifier
anonymous-priority                    none
max-incoming-conns                     0
per-scc-ip-max-incoming-conns          0
inactive-conn-timeout 0
untrusted-conn-timeout 0
network-id
ext-policy-server
default-location-string
charging-vector-mode pass
charging-function-address-mode pass
ccf-address
ecf-address
term-tgrn-mode                         none
implicit-service-route                 disabled
rfc2833-payload                        101
rfc2833-mode                           transparent
constraint-name response-
map
local-response-map
ims-aka-feature                        disabled
enforcement-profile
refer-call-transfer                   disabled
route-unauthorized-calls
tcp-keepalive                          none
add-sdp-invite                         disabled
add-sdp-profiles
last-modified-by                       admin@console
last-modified-date                     2009-11-04 00:49:24

```

```

sip-interface
  state enabled
  realm-id INSIDE
  description
  sip-port
    address 192.168.67.130
    port 5060
    transport-protocol TCP
    tls-profile
    allow-anonymous agents-only
    ims-aka-profile
  carriers
  trans-expire 0
  invite-expire 0
  max-redirect-contacts 0
  proxy-mode
  redirect-action
  contact-mode none
  nat-traversal none
  nat-interval 30
  tcp-nat-interval 90
  registration-caching disabled
  min-reg-expire 300
  registration-interval 3600
  route-to-registrar disabled
  secured-network disabled
  teluri-scheme disabled
  uri-fqdn-domain
  trust-mode all
  max-nat-interval 3600
  nat-int-increment 10
  nat-test-increment 30
  sip-dynamic-hot disabled
  stop-recurse 401,407
  port-map-start 0
  port-map-end 0
  in-manipulationid
  out-manipulationid
  manipulation-string
  sip-ims-feature disabled
  operator-identifier
  anonymous-priority none
  max-incoming-conns 0
  per-scc-ip-max-incoming-conns 0
  inactive-conn-timeout 0
  untrusted-conn-timeout 0
  network-id
  ext-policy-server
  default-location-string
  charging-vector-mode pass
  charging-function-address-mode pass
  ccf-address
  ecf-address
  term-terp-mode none
  implicit-service-route disabled

```



```

rfc2833-payload          101
rfc2833-mode             transparent
constraint-name response-
map
local-response-map
ims-aka-feature          disabled
enforcement-profile
refer-call-transfer      disabled
route-unauthorized-calls
tcp-keepalive            none
add-sdp-invite           disabled
add-sdp-profiles
last-modified-by        admin@console
last-modified-date      2009-11-04 00:50:10

sip-manipulation
name                     NAT_IP
description
header-rule
    name                 manipFrom
    header-name          From
    action               manipulate
    comparison-type      case-sensitive
    match-value
    msg-type             request
    new-value methods
    element-rule
        name              FROM
        parameter-name
        type              uri-host
        action            replace
        match-val-type    any
        comparison-type   case-sensitive
        match-value
        new-value         $LOCAL_IP

```

```

header-rule
  name                manipTo
  header-name         To
  action              manipulate
  comparison-type     case-sensitive
  match-value
  msg-type            request
  new-value methods
  element-rule
    name              TO
    parameter-name
    type              uri-host
    action            replace
    match-val-type   any
    comparison-type  case-sensitive
    match-value
    new-value        $REMOTE_IP

header-rule
  name                deletePSITE
  header-name         P-Site action
  comparison-type     delete
  match-value         pattern-rule
  msg-type            request
  new-value methods
  last-modified-by   admin@console
  last-modified-date 2010-06-09 19:58:37

header-rule
  name                modPAI
  header-name         P-Asserted-Identity
  action              manipulate
  comparison-type     pattern-rule
  match-value         any
  msg-type            INVITE
  new-value
  element-rule
    name              modVal
    parameter-name
    type              uri-user
    action            find-replace-all
    match-val-type   any
    comparison-type  case-sensitive
    match-value      \+ (.*)
    new-value        $modPAI.$modVal.$1

header-rule
  name                modContact
  header-name         Contact
  action              manipulate

```

```

comparison-type          pattern-rule msg-type
                          any
                          INVITE

methods
match-value
new-value element- rule
    name                  modVal
    parameter-name
    type                  uri-user
    action                find-replace-all match-
    val-type             any
    comparison-type      case-sensitive
    match-value          \+(.*)
    new-value            $modContact.$modVal.$1

header-rule
    name                  modFrom
    header-name          From
    action               manipulate
    comparison-type      pattern-rule msg-type
    methods              any
    match-value|         INVITE
    new-value element- rule
        name              modVal
        parameter-name
        type              uri-user
        action            find-replace-all match-
        val-type         any
        comparison-type  case-sensitive match-
        value            \+(.*)
        new-value        $modFrom.$modVal.$1

header-rule
    name                  modUpdate
    header-name          Update action
    comparison-type      manipulate
    methods              pattern-rule msg-type
    match-value new-value any
    element-rule
        name              modVal
        parameter-name
        type              uri-user
        action            find-replace-all
        match-val-type   any
        comparison-type  case-sensitive match-
        value            \+(.*)
        new-value        $modUpdate.$modVal.$1

steering-pool
    ip-address           192.168.64.130
    start-port           16384 end-
    port                32767 realm-
    id                  OUTSIDE
    network-interface
    last-modified-by   admin@console
    last-modified-date 2009-11-04 00:49:36

```

```

ip-address          192.168.67.130
start-port          16384 end-
port                32767 realm-
id                  INSIDE
network-interface
last-modified-by   admin@console
last-modified-date 2009-11-04 00:50:20

system-config
hostname            acme.sbc
description
location
mib-system-contact
mib-system-name
mib-system-location
snmp-enabled        enabled
enable-snmp-auth-traps disabled
enable-snmp-syslog-notify disabled
enable-snmp-monitor-traps disabled
enable-env-monitor-traps disabled
snmp-syslog-his-table-length 1
snmp-syslog-level   WARNING
system-log-level    WARNING
process-log-level    NOTICE
process-log-ip-address 0.0.0.0
process-log-port     0 collect
                    sample-interval      5
                    push-interval        15
                    boot-state           disabled start-
                    time                  now
                    end-time             never
                    red-collect-state     disabled
                    red-max-trans         1000
                    red-sync-start-time   5000 red-
                    sync-comp-time        1000
                    push-success-trap-state disabled call-
trace                disabled
internal-trace        disabled
log-filter            all
default-gateway       135.8.139.1
restart               enabled
exceptions
telnet-timeout        0
console-timeout       0
remote-control        enabled
cli-audit-trail       enabled
link-redundancy-state disabled
source-routing        enabled
cli-more              disabled
terminal-height       24
debug-timeout         0
trap-event-lifetime   0
last-modified-by     admin@console
last-modified-date   2009-11-04 00:27:17

```



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Oracle Corporation
World Headquarters
500 Oracle Parkway
Redwood Shores, CA 94065
U.S.A.

Worldwide Inquiries:
Phone: +1.650.506.7000
Fax: +1.650.506.7200

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