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AT&T IP Flexible Reach Service with Avaya Communication Manager 6.0 and Acme Packet 3000-4000 Series SBC

A Technical Application Note



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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

The technical application note defines a SIP configuration model suitable for Oracle's Acme Packet 3000-4000 series Session Border Controllers (SBCs) connecting Avaya Communications 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 Oracle technical application note outlines the recommended configuration for the Acme Packet 3000-4000 series Session Border Controllers, the industry leading Session Border Controllers, for connecting AT&T's IP Flexible Reach service to Avaya Communication Manager 6.0 customers. This document is applicable to 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 Oracle Communications Session Border Controller.

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.

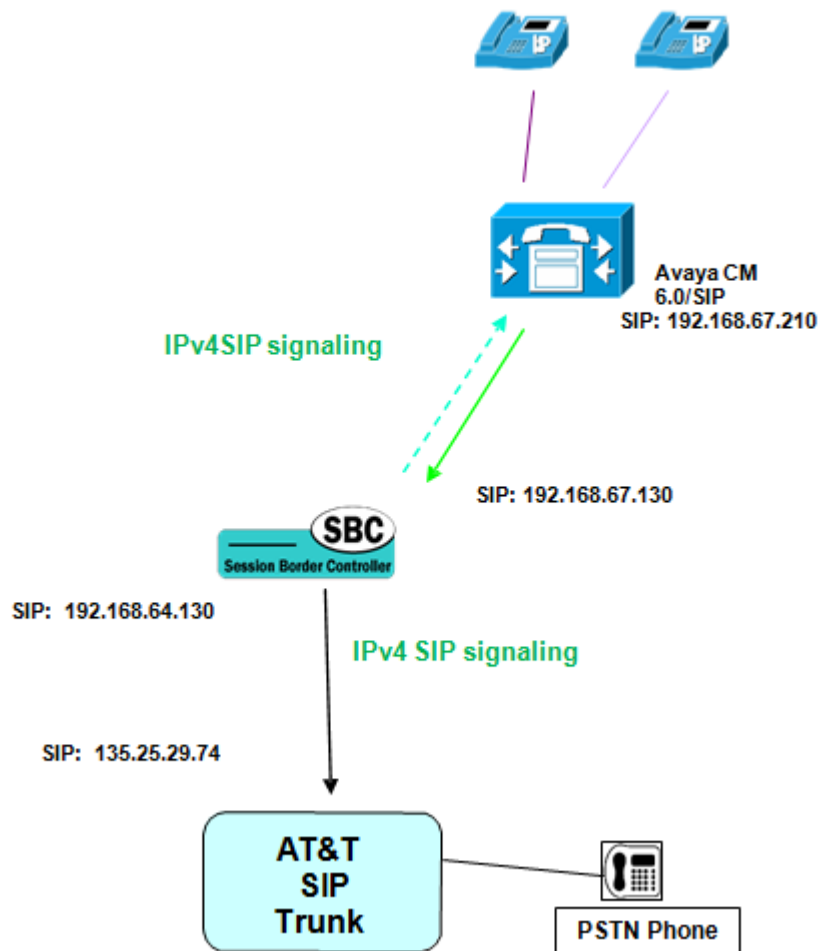
This document will annotate each configuration with information on its general applicability. The intent is to:

- 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 Communication Manager 6.0 in the Enterprise and the AT&T Flexible Reach service.

The Avaya Communication 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 SD's SIP Signaling target for the Avaya Communication 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 SD, to and from the AT&T network SIP Peering side.

The Local-Policy configurations route sessions to/from the Avaya CM 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

Normative References

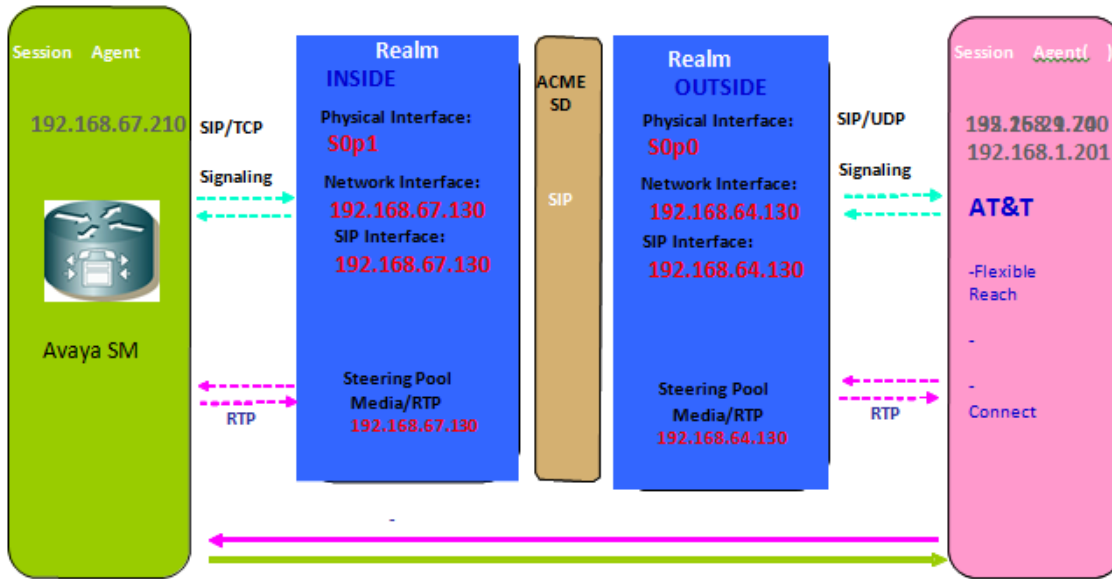
[1] Acme Packet, "Acme Packet 4000 S-C6.2.0 ACLI Configuration Guide", 400-0061-62 Rev 2.20, Apr 2012. [2] Archer, M., "BCP SIP Peering Configuration", 520-0038-01, Mar 2010

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Appendix A: Reference Diagram and Configuration

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



NOTE: 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
  subseq-guard-timer      300
  tcp-flow-time-limit     86400
  tcp-initial-guard-timer 300
  tcp-subseq-guard-timer  300
  tcp-number-of-ports-per-flow 2
  hnt-tcp                 disabled
  algd-log-level          NOTICE
  mbcd-log-level          NOTICE
  red-flow-port           1985
  red-rgcp-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
arp-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
dnssalg-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	
pri-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	
pri-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	
ip-address	192.168.67.130
prl-utility-addc	192.168.67.131
sec-utility-addc	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

rhw-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
addr-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
observ-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
  addr-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
  rsm-release                   disabled
  generate-udp-checksum         disabled

```


max-bandwidth fallback-bandwidth	0	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 user-cac-mode		enabled
user-cac-bandwidth		none
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 codec-policy		disabled
codec-manip-in-realm		
constraint-name		disabled
call-recording-server-id		
stun-enable		disabled 0.0.0.0
stun-server-ip		
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
<u>session-agent</u>		
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-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-asr	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=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-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                   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                          Communication 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-asr                             0
time-to-resume                      0
ttr-no-response                     0
in-service-period                   0
burst-rate-window                   0
sustain-rate-window                 0
reg-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                    enabled
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-1p   disabled
options                 max-udp-length=0
                        set-inv-exp-at-100-resp
add-ucid-header         disabled
    
```

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	

```

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
proxv-mode
redirect-action
contact-mode        none
nat-traversal       none
nat-interval        30
    
```

tcp-nat-interval	registration-caching	90
min-reg-expire		disabled
		300
registration-interval	route-to-registrar	3600
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		ChangeSubState
out-manipulationid		Privacy
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		

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-hnt	disabled
stop-recurse	401,407
port-map-start	0
port-map-end	0
in-manipulationid	storecontact
out-manipulationid	NAT_IP_rel
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-term-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                    Privacy
  description
  split-headers |
  join-headers
  header-rule
    name                  From_Header
    header-name           From
    action                 manipulate
    comparison-type       case-sensitive
    msg-type              request
    methods match-value
    new-value element-
    rule
      name                From_header
      parameter-name
      type                 uri-host
      action               replace
      match-val-type       any
      comparison-type      case-sensitive
      match-value
      new-value            $LOCAL_IP
  header-rule
    name                  To_Header
    header-name           To
    action                 manipulate
    comparison-type       case-sensitive
    msg-type              request
    methods match-value
    new-value element-
    rule
      name                To_header
      parameter-name
      type                 uri-host
      action               replace
      match-val-type       any
      comparison-type      case-sensitive
      match-value
      new-value            $REMOTE_IP
  header-rule
    name                  PAI_Header
    header-name           P-Asserted-Identity
    action                 manipulate
    comparison-type       case-sensitive
    msg-type              any
    methods match-value
    new-value element-
    rule
      name                PAI_Local_IP
      parameter-name
      type                 uri-host

```

	<pre> action match-val-type comparison-type match-value new-value </pre>	<pre> replace any case-sensitive customerb.com \$LOCAL_IP </pre>
header-rule	<pre> name header-name action comparison-type msg-type methods match-value new- value element-rule </pre>	<pre> PPI_Header P-Preferred-Identity manipulate case-sensitive any </pre>
	<pre> name parameter-name type action match-val-type comparison-type match-value new-value </pre>	<pre> PPI_Local_IP uri-host replace any case-sensitive \$LOCAL_IP </pre>
header-rule	<pre> name header-name action comparison-type msg-type methods match-value new-value element- rule </pre>	<pre> RPI_Header Remote-Party-ID manipulate case-sensitive any </pre>
	<pre> name parameter-name type action match-val-type comparison-type match-value new-value </pre>	<pre> RPI_header uri-host replace any case-sensitive \$LOCAL_IP </pre>
header-rule	<pre> name header-name action comparison-type msg-type methods match-value new-value element- rule </pre>	<pre> manipRURI request-uri manipulate case-sensitive request INVITE </pre>
	<pre> name parameter-name type action match-val-type comparison-type match-value new-value </pre>	<pre> modRURI uri-host replace any case-sensitive \$REMOTE_IP </pre>
header-rule	<pre> name header-name action comparison-type msg-type </pre>	<pre> manipDiversion Diversion manipulate case-sensitive any </pre>

<pre> methods match-value new- value element-rule name parameter-name type action match-val-type comparison-type match-value new-value header-rule name header-name action comparison-type msg-type methods match-value new-value element- rule name parameter-name type action match-val-type comparison-type match-value new-value header-rule name header-name action comparison-type msg-type methods match-value new- value element-rule name parameter-name type action match-val-type comparison-type match-value new-value header-rule name header-name action comparison-type msg-type methods match-value new-value header-rule name header-name action comparison-type msg-type methods match-value </pre>	<pre> INVITE Diversion uri-host replace any case-sensitive \$LOCAL_IP storeXcontact X-Contact manipulate case-sensitive request INVITE storeXcontact header-value store any case-sensitive (.*) replacecontact Contact manipulate pattern-rule request INVITE replacecontact uri-user replace any pattern-rule (.*) \$storeXcontact.\$storeXcontact.\$0 delXcontact X-Contact delete pattern-rule request INVITE manipv6contact Contact manipulate case-sensitive reply </pre>
---	---

```

new-value element-
rule
    name                v6contact
    parameter-name
    type                uri-host
    action              replace
    match-val-type     any
    comparison-type    case-sensitive
    match-value        customerb.com
    new-value          $LOCAL_IP

header-rule
    name                ReferredBy
    header-name        Referred-By
    action              manipulate
    comparison-type    case-sensitive
    msg-type           any
    methods            match-value
    new-value element-
    rule
        name                referredbyhdr
        parameter-name
        type                uri-host
        action              replace
        match-val-type     any
        comparison-type    case-sensitive
        match-value        $LOCAL_IP

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

last-modified-by      admin@console
last-modified-date    2012-01-31 11:41:55

sip-manipulation
    name                NAT_IP_rel
    description
    split-headers join-
    headers header-rule
        name                Inbound_To
        header-name        To
        action              manipulate
        comparison-type    case-sensitive
        msg-type           request
        methods            match-value new-
        value element-rule
            name                To
            parameter-name

```

```

                                type                uri-host
                                action               replace
                                match-val-type      any
                                comparison-type     case-sensitive
                                match-value        $LOCAL_IP
                                new-value          customerb.com
header-rule
    name                          Inbound_From
    header-name                   From
    action                        manipulate
    comparison-type               case-sensitive
    msg-type                      request
    methods match-value
    new-value element-
    rule
                                name                From
                                parameter-name
                                type                uri-host
                                action               replace
                                match-val-type      any
                                comparison-type     case-sensitive
                                match-value        $LOCAL_IP
                                new-value
header-rule
    name                          Inbound_PAI_direct
    header-name                   P-Asserted-Identity
    action                        manipulate
    comparison-type               case-sensitive
    msg-type                      request
    methods
    match-value new-
    value element-rule
                                name                modPAI
                                parameter-name
                                type                uri-host
                                action               replace
                                match-val-type      any
                                comparison-type     case-sensitive
                                match-value        $REMOTE_IP
                                new-value          customerb.com
last-modified-by                 admin@console
last-modified-date               2012-01-31 11:44:29
sip-manipulation
    name                          storecontact
    description
    split-headers join-
    headers header-rule
                                name                strcon
                                header-name         Contact
                                action              manipulate
                                comparison-type     case-sensitive
                                msg-type           request
                                methods             INVITE
                                match-value new-
                                value element-rule
                                name                strval
                                parameter-name
                                type                uri-user
                                action              store
                                match-val-type      any
                                comparison-type     case-sensitive

```

```

                                match-value      (.*
                                new-value

header-rule
  name                          addxcontact
  header-name                    X-Contact
  action                          add
  comparison-type                 pattern-rule
  msg-type                        request
  methods                          INVITE
  match-value
  new-value element-
  rule
                                name              addx
                                parameter-name
                                type              header-value
                                action            replace
                                match-val-type   any
                                comparison-type   pattern-rule
                                match-value
                                new-value        $strcon.$strval.$@

  last-modified-by               admin@console
  last-modified-date             2011-02-25 12:32:32

sip-manipulation
  name                            ChangeSubState
  description split-
  headers join-headers
  header-rule
                                name              Subscription_State
                                header-name        Subscription-State
                                action            manipulate
                                comparison-type     case-sensitive
                                msg-type          request
                                methods            NOTIFY
                                match-value
                                new-value element-
                                rule
                                name              value
                                parameter-name
                                type              header-value
                                action            replace
                                match-val-type   any
                                comparison-type   pattern-rule
                                match-value
                                new-value        terminated
                                                active;expires=1

  last-modified-by               admin@console
  last-modified-date             2011-02-28 12:30:25

steering-pool
  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

steering-pool
  ip-address                      192.168.64.130
  start-port                      16384
  end-port                        32767
  realm-id                         OUTSIDE
  network-interface

```

system-config

hostname		acmesbc
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-gnx-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	



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