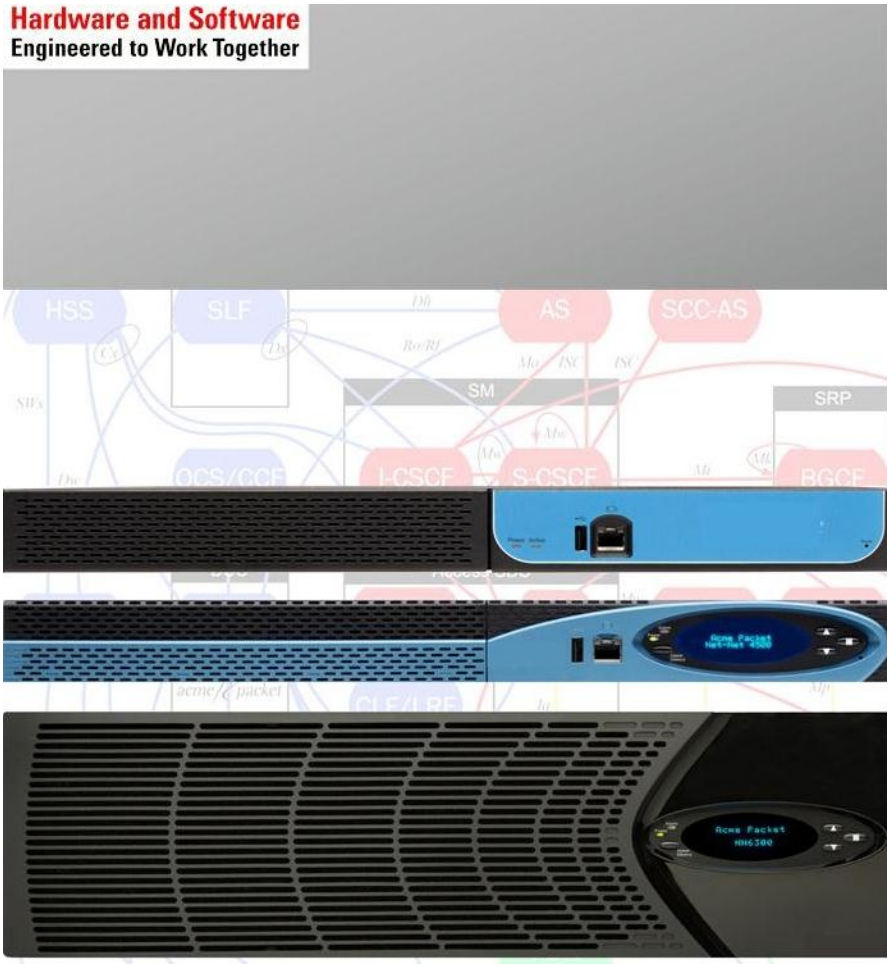

Cisco UCM 6.x SIP to AT&T SIP with Acme Packet 3000-4000 SBC

A Technical Application Note

ORACLE | CISCO

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

While AT&T IP Flexible Reach services support E911/911 calling capabilities in certain circumstances, there are significant limitations on how these capabilities are delivered. Please review the AT&T IP Flexible Reach Service Guide in detail to understand these limitations and restrictions.

Specific IP endpoints Support

Specific IP endpoints are supported with IP Flex Reach. These endpoints must support SCCP and NTE. The Cisco IP endpoints that support SCCP and NTE are:

VG224

7902, 7905, 7911, 7912, 7931, 7937, 7940, 7941, 7942, 7945, 7960, 7961, 7962, 7965, 7970, 7971, 7975

Future new phone models

The Cisco IP endpoints that do NOT support NTE and thus are NOT supported with IP Flex Reach are: 7910, 7920, 7935, 7936

VG248

DPA-7610, DPA-7630

Please refer to the following Cisco website for further information.

http://www.cisco.com/en/US/docs/voice_ip_comm/cucm/srnd/6x/media.html#wp1055031

HIPCS is not supported with Cisco Unified Communication Manager

If the customer is in a HIPCS serving area, Cisco Unified Communication Manager SIP is not supported. Please consult with your customer care or sales person to determine if you are in a HIPCS serving area.

AT&T IP Teleconferencing Service is not supported when G.729 is configured on Cisco Unified Communication Manager

Cisco Unified Communication Manager only supports a single codec on an IP trunk. Since the AT&T IP Teleconferencing (IPTC) Service supports G.711, a Cisco Unified Communication Manager configured for G.729 will not work with the IPTC service.

Abstract 2
Design Goals 3
SIP Peering Scenario for UCM 6.x 3
Notes on Reference Configuration 4
Normative References 5
Authors' Address 5
Appendix A: Reference Configuration 6

Abstract

This technical application note defines a SIP configuration model suitable for the Oracle Communications Session Border Controllers connecting SIP Trunks from Cisco Unified Communications Manager (UCM) to AT&T's IP Flex Reach service. The reference configuration presented was tested in AT&T's lab.

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 SIP Trunks from Cisco UCM 6.x SIP to AT&T's IP Flex Reach service. This document is based on Acme Packet OS version C5.1.0 but is applicable to images 4.x and higher.

Many enterprise customers with installed Cisco Unified Call Manager (UCM) are migrating from 4.x to 6.x and are exploring the new features such as SIP signaling on the trunk side instead of the legacy H.323 protocol. This provides for a homogenous VoIP protocol moving forward which is needed for delivering the next wave of Unified Communications across the entire business. Moving from H.323 to SIP also eases the support burden and complexities involved with supporting multiple signaling protocols.

SIP to SIP Trunking traffic with UCM 6.x is a common migration strategy for most enterprise UCM customers previously supporting H.323 UCM platforms. Both protocols can be supported simultaneously on the Oracle Communications Session Border Controller. Refer to [3] for details on UCM H.323 to SIP support on the Oracle Communications Session Border Controller.

An AT&T SIP Trunk with PRACK (RFC 3262) is utilized to ensure the media session is established before the call is connected. This eliminates the need for MTP resources on the UCM and eliminates the clipping that sometimes accompanies the lack of SDP Early Offer.

Intended Audience

This document is intended for use by Oracle Systems Engineers, third party Systems Integrators, and end-users of the Session Border Controllers. It assumes that the reader is familiar with basic operations of the Session Border Controller, and it is STRONGLY RECOMMENDED that the reader has attended the following training courses (or can demonstrate equivalent experience):

- Y EDU-CAB-C-CLI: Oracle Communications Session Border Controller Configuration Basics
- Y EDU-TS1-OE: Oracle Communications Session Border Controller Troubleshooting Level 1

Support

Cisco Call Manager Guide is located at the following AT&T URL:
http://www.corp.att.com/dna/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 Cisco UCM (Cisco Call Manager) deployment model: UCM originating SIP traffic and terminating to a SIP provider via the Oracle Communications Session Border Controller. The config 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 UCM SIP interoperability issue's by standardizing field configurations
- Provide guidelines for new users for the Session Border Controller
- Provide a configuration template, baselining the SIP to SIP configuration (with accompanying diagram)
- Flexibility: how resilient the configuration is and how adaptable the configuration is when turning up new UCM 6.x SIP to SIP networks
- Performance: minimize the use of unnecessary configuration objects

SIP Peering Scenario for UCM 6.x

This section includes a reference architecture diagram, where the Session Border Controller is integrated as an Enterprise CPE Trunking Session Border Controller, performing SIP between the Enterprise (UCM) and the AT&T SIP Trunk supporting PRACK. This reference architecture must be confirmed or modified by the customer according to the specific project requirements.

The Enterprise SIP UCM cluster peers with the long distance provider via the Oracle Communications Session Border Controller. Below is the network diagram and representative call-flow.

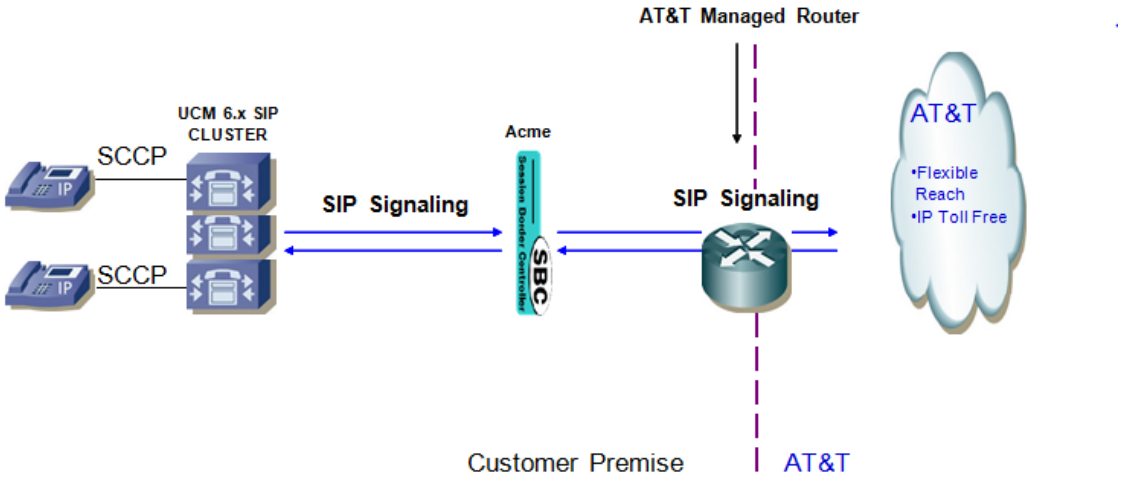

Diagram 1: Enterprise UCM SIP to AT&T SIP Trunk via Oracle Communications Session Border Controller

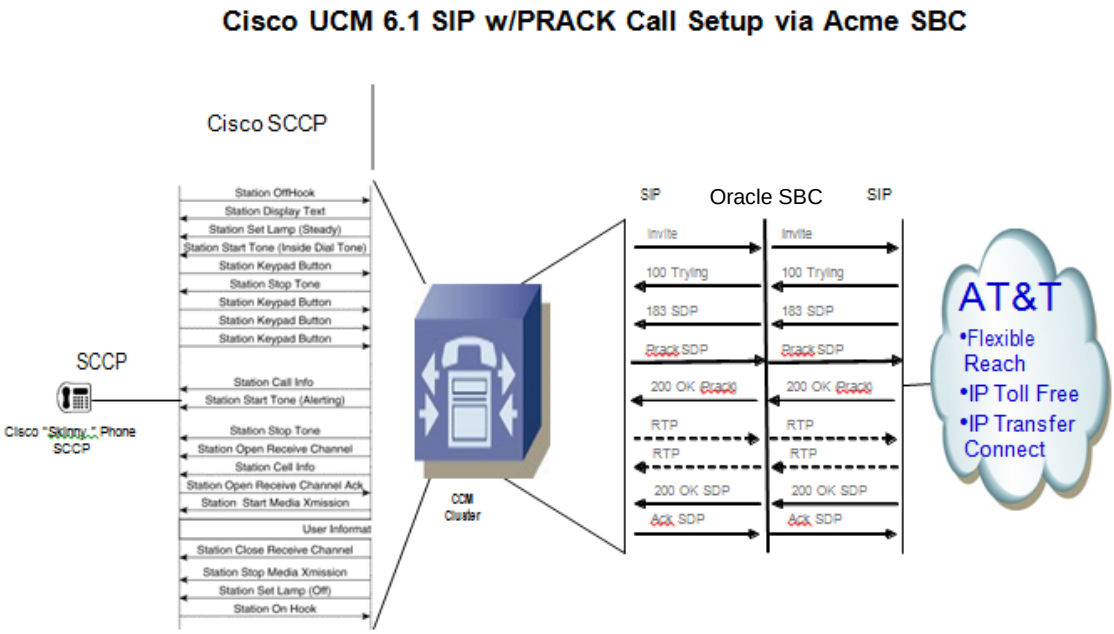

Diagram 2: Call-Flow for Enterprise UCM SIP to AT&T SIP Trunk via Oracle Communications Session Border Controller

Notes on Reference Configuration

The Enterprise UCM cluster is configured for SIP Trunking and acts as a gateway. The Oracle Communications Session Border Controller is configured to perform SIP peering between the Enterprise and AT&T's network.

The realm labeled *enterprise-core* and its corresponding sip-interface (address 10.10.10.100) is where the SIP signaling and RTP will enter/exit the SBC. The Enterprise UCM needs to signal to this target IP address.

The realm labeled *peer* and its corresponding sip-interface (address 192.168.1.100) is where the SIP signaling and RTP will enter/exit the SBC to/from the Long Distance SIP Provider.

The Local-Policy configurations route sessions to/from the Enterprise UCM to the Long Distance SIP Provider.

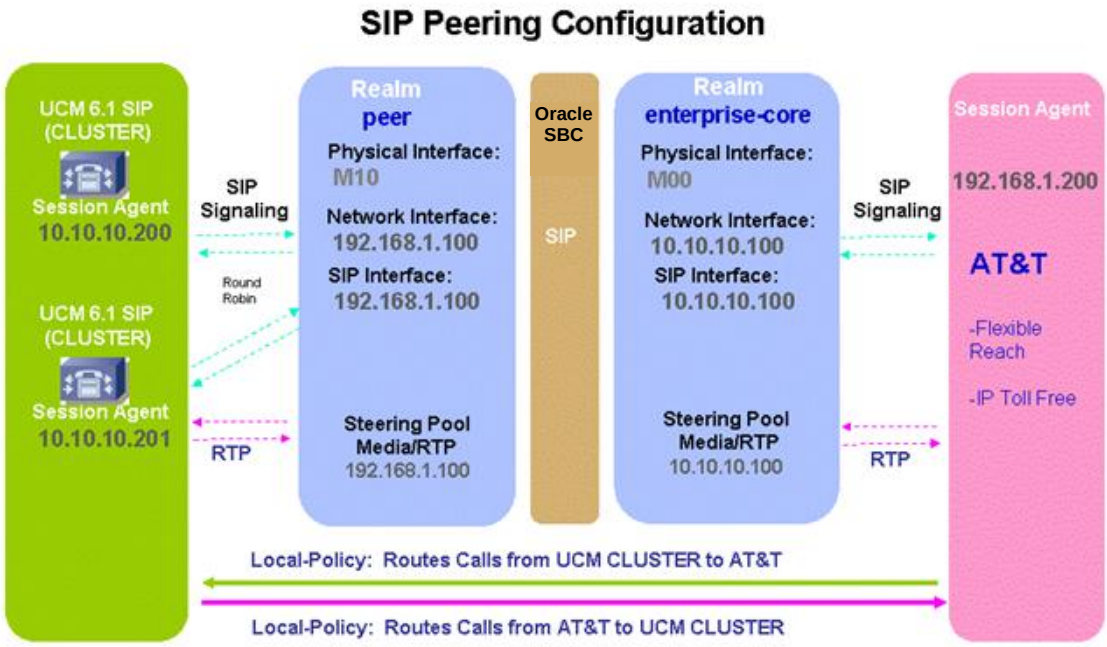

Diagram 3: Network Diagram for Reference Configuration

Normative References

[1] Acme Packet, "Net-Net 4000 S-C6.1.0 ACLI Configuration Guide", 400-0061-61, Jan 2009.

[2] Timmons, P., "BCP - Peering Configuration 4.0.0 and later", 520-0014-01, May 2007

[3] Walker, C., "Cisco UCM 4.x H323 Interworking to ATT SIP with Net-Net 3000-4000 Series SD Application Note", 510-0015-00, July 2009

Authors' Address

Nate Denbow
email: nathan.denbow@oracle.com

Oracle
100 Crosby Drive
Bedford, MA 01730

Appendix A: Reference Configuration

```
Acme Packet # show run local-
policy
            from-address                 *
            to-address                   *
            source-realm                 peer
            activate-time                N/A
            deactivate-time              N/A
            state                        enabled
            policy-priority              none
            policy-attribute
                      next-hop                   SAG:Enterprise
                      realm                      enterprise-core-ccm
                      action                     none
                      terminate-recursion disabled
                      carrier
                      start-time                 0000
                      end-time                   2400
                      days-of-week               U-S
                      cost                       0
                      app-protocol               SIP
                      state                      enabled
                      media-profiles

 local-policy
            from-address                 *
            to-address                   *
            source-realm                 enterprise-core-ccm
            activate-time                N/A
            deactivate-time              N/A
            state                        enabled
            policy-priority              none policy-attribute
                      next-hop                   SAG:ATT
                      realm                      peer
                      action                     none
                      terminate-recursion disabled
                      carrier
                      start-time                 0000
                      end-time                   2400
                      days-of-week               U-S
                      cost                       0
                      app-protocol               SIP
                      state                      enabled
                      media-profiles

 media-manager
          state                                   enabled
          latching                                disabled
          flow-time-limit                         86400
          initial-guard-timer                     43200
          subsq-guard-timer                       43200
          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
        mbcd-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                 10000000
        max-untrusted-signaling                 100
        min-untrusted-signaling                 30
        app-signaling-bandwidth                 0
        tolerance-window                        30
        rtcp-rate-limit                         0
        min-media-allocation                    32000
        min-trusted-allocation                  1000
        deny-allocation                         1000
        anonymous-sdp                           disabled
        arp-msg-bandwidth                       32000
        fragment-msg-bandwidth                  0
        rfc2833-timestamp                       enabled
        default-2833-duration                   100
        rfc2833-end-pkts-only-for-non-sig disabled
        translate-non-rfc2833-event             disabled

network-interface
           name                                    M00
           sub-port-id                             0
           description                             AT&T/Peer Facing
           hostname
           ip-address                              192.168.1.100
           pri-utility-addr                        192.168.1.101
           sec-utility-addr                        192.168.1.102
           netmask                                 255.255.255.0
           gateway                                 192.168.1.1
           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                             192.168.1.100
           ftp-address
           icmp-address
           snmp-address
           telnet-address

network-interface
```

```
        name                                    M10
        sub-port-id                             0
        description                             Enterprise/Core Facing
        hostname
        ip-address                              10.10.10.100
        pri-utility-addr                        10.10.10.101
        sec-utility-addr                        10.10.10.102
        netmask                                 255.255.255.0
        gateway                                 10.10.10.1
        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                             10.10.10.100
        ftp-address
        icmp-address                            10.10.10.100
        snmp-address
        telnet-address


phy-interface
        name                                    M00
        operation-type                          Media
        port                                    0
        slot                                    0
        virtual-mac
        admin-state                             enabled
        auto-negotiation                        enabled
        duplex-mode
        speed

phy-interface
        name                                    M10
        operation-type                          Media
        port                                    0
        slot                                    1
        virtual-mac
        admin-state                             enabled
        auto-negotiation                        enabled
        duplex-mode
        speed

realm-config
          identifier                              peer
          addr-prefix                           0.0.0.0
          network-interfaces
                                                 M00:0
          mm-in-realm                           enabled
          mm-in-network                         enabled
          mm-same-ip                            enabled
```

```
                mm-in-system                          enabled
                bw-cac-non-mm                         disabled
                msm-release                           disabled
                qos-enable                            disabled
                max-bandwidth                         0
                ext-policy-svr
                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 class-
                profile
                average-rate-limit                    0
                access-control-trust-level invalid-signal-
                threshold                             0
                maximum-signal-threshold              0
                untrusted-signal-threshold            0
                deny-period                           30
                symmetric-latching                    disabled
                pai-strip                             disabled
                trunk-context
                early-media-allow
                additional-prefixes
                restricted-latching                   none
                restriction-mask                      32
                accounting-enable                     enabled
                user-cac-mode                         none
                user-cac-bandwidth                    0
                user-cac-sessions                     0
                net-management-control                disabled
                delay-media-update                    disabled

realm-config
                identifier                            enterprise-core-ccm
                addr-prefix                           0.0.0.0
                network-interfaces
                                                       M10:0
                mm-in-realm                           enabled
                mm-in-network                         enabled
                mm-same-ip                            enabled
                mm-in-system                          enabled
                bw-cac-non-mm                         disabled
                msm-release                           disabled
                qos-enable                            disabled
                max-bandwidth                         0
                ext-policy-svr
                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 class-
            profile
            average-rate-limit                  0
            access-control-trust-level
            invalid-signal-threshold            0
            maximum-signal-threshold            0
            untrusted-signal-threshold          0
            deny-period                         30
            symmetric-latching                  disabled
            pai-strip                           disabled
            trunk-context
            early-media-allow
            additional-prefixes
            restricted-latching                 none
            restriction-mask                    32
            accounting-enable                   enabled
            user-cac-mode                       none
            user-cac-bandwidth                  0
            user-cac-sessions                   0
            net-management-control              disabled
            delay-media-update                  disabled

session-agent
            hostname                              192.168.1.200
            ip-address
            port                                  5060
            state                                 enabled
            app-protocol                          SIP
            app-type
            transport-method                      UDP
            realm-id                              peer
            description                           AT&T Session Agent Primary
            carriers
            allow-next-hop-lp                     enabled
            constraints                           enabled
            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                       300
            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                                    300
            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 p-asserted-
            id trust-group
            max-register-sustain-rate                       0
            early-media-allow
            invalidate-registrations                        disabled
            rfc2833-mode                                    none
            rfc2833-payload                                 0
            codec-policy

session-agent
            hostname                                        192.168.1.201
            ip-address
            port                                            5060
            state                                           enabled
            app-protocol                                    SIP
            app-type
            transport-method                                UDP
            realm-id                                        peer
            description                                     AT&T Session Agent Secondary carriers
            allow-next-hop-lp                               enabled
            constraints                                     enabled
            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                                 300
            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                         300
                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 p-asserted-
                id trust-group
                max-register-sustain-rate             0
                early-media-allow
                invalidate-registrations              disabled
                rfc2833-mode                          none
                rfc2833-payload                       0
                codec-policy

session-agent
                hostname                              10.10.10.200
                ip-address
                port                                  5060
                state                                 enabled
                app-protocol                          SIP
                app-type
                transport-method                      UDP
                realm-id                              *
                description                           Enterprise SIP UCM Primary 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
                ttc-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                           300
                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
                p-asserted-id trunk-group
                max-register-sustain-rate               0
                early-media-allow
                invalidate-registrations                disabled
                rfc2833-mode                            none
                rfc2833-payload                         0
                codec-policy

session-agent
                hostname                                10.10.10.201
                ip-address
                port                                    5060
                state                                   enabled
                app-protocol                            SIP
                app-type
                transport-method                        UDP
                realm-id                                *
                description                             Enterprise SIP UCM Secondary
                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
        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                            300
        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 p-
        asserted-id trunk-group
        max-register-sustain-rate                0
        early-media-allow
        invalidate-registrations                 disabled
        rfc2833-mode                             none
        rfc2833-payload                          0
        codec-policy

session-group
        group-name                               ATT
        description
         state                                    enabled
        app-protocol                             SIP
        strategy                                 RoundRobin
        dest
                                                 192.168.1.200
                                                 192.168.1.201
        trunk-group
        sag-recursion                            enabled
        stop-sag-recurse                         401,407

session-group
        group-name                               Enterprise
        description
        state                                    enabled
        app-protocol                             SIP
```

```
        strategy                              RoundRobin
        dest
                                              10.10.10.200
                                              10.10.10.201
        trunk-group
        sag-recursion                         disabled
        stop-sag-recurse                      401,407

sip-config
        state                                 enabled
        operation-mode                        dialog
        dialog-transparency                   enabled
        home-realm-id                         peer
        egress-realm-id                       enterprise-core-ccm
        nat-mode                              Public
        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                       0
        enum-sag-match                        disabled
        extra-method-stats                    disabled
        rph-feature                           disabled
        nsep-user-sessions-rate               0
        registration-cache-limit              0
        options                               add-prov-to-tag=no
                                                 insert-arp-header max-
                                                 udp-length=0
                                                 set-inv-exp-at-100-resp

sip-interface
        state                                 enabled
        realm-id                              peer
        description sip-port
                address                               192.168.1.100
                port                                  5060
                transport-protocol                    UDP
```

```
        tls-profile
        allow-anonymous                                 agents-only
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                        30
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
out-manipulationid              Privacy
sip-ims-feature                         disabled
operator-identifier
anonymous-priority              none
max-incoming-conns                      0
per-src-ip-max-incoming-conns   0
inactive-conn-timeout                   0
untrusted-conn-timeout                  0
network-id
ext-policy-server default-location-string
charging-vector-mode    none    charging-function-
address-mode none ccf-address
ecf-address
term-tgrp-mode                  none
implicit-service-route          disabled
rfc2833-payload                         101
rfc2833-mode                    transparent
constraint-name response-map
local-response-map
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                                        enterprise-core-ccm
        description
        sip-port
                address                                             10.10.10.100
                port                                        5060
                transport-protocol                          UDP
                tls-profile
                allow-anonymous                             all
        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
        out-manipulationid                    Privacy
        sip-ims-feature                                 disabled
        operator-identifier
        anonymous-priority                    none
        max-incoming-conns                              0
        per-src-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-tgrp-mode
        implicit-service-route                disabled
        rfc2833-payload                                 101
        rfc2833-mode                                    transparent
        constraint-name
        response-map
```

```
        local-response-map
        enforcement-profile
        refer-call-transfer                    disabled
        route-unauthorized-calls
        tcp-keepalive                          none
        add-sdp-invite                         disabled
        add-sdp-profiles

sip-manipulation
        name                                   Privacy
        description                            changing ip
        header-rule
                name                                   PAI_Header
                header-name                            P-Asserted-Identity
                action                                 manipulate
                comparison-type                        case-sensitive
                match-value
                msg-type                               any
                new-value
                methods element-rule
                        name                                   PAI_Local_IP
                        parameter-name
                        type                                   uri-host
                        action                                 replace
                        match-val-type                         any
                        comparison-type                        case-sensitive
                        match-value
                        new-value                              $LOCAL_IP
        header-rule
                name                                   PPI_Header
                header-name                            P-Preferred-Identity
                action                                 manipulate
                comparison-type                        case-sensitive
                match-value
                msg-type                               any
                new-value
                methods element-rule
                        name                                   PPI_Local_IP
                        parameter-name
                        type                                   uri-host
                        action                                 replace
                        match-val-type                         any
                        comparison-type                        case-sensitive
                        match-value
                        new-value                              $LOCAL_IP
        header-rule
                name                                   From_Header
                header-name                            From
                action                                 manipulate
                comparison-type                        case-sensitive
                match-value
                msg-type                               request
                new-value methods
                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
        match-value
        msg-type                                request
        new-value
        methods
        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                                    RPI_Header
        header-name                             Remote-Party-ID
        action                                  manipulate
        comparison-type                         case-sensitive
        match-value
        msg-type                                any
        new-value
        methods element-rule
                name                                    RPI_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                                    Refer_header
        header-name                             Referred-By
        action                                  manipulate
        comparison-type                         case-sensitive
        match-value
        msg-type                                any
        new-value
        methods element-rule
                name                                    referredbyhdr
                parameter-name
                type                                    uri-host
```

```
                        action                                  replace
                        match-val-type                          any
                        comparison-type                         case-sensitive
                        match-value
                        new-value                               $LOCAL_IP

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

                header-rule
                        name                                    ContactHdr
                        header-name                             Contact
                        action                                  manipulate
                        comparison-type                         case-sensitive
                        match-value
                        msg-type                                any
                        new-value
                        methods element-rule
                                name                                    ContactHostReplace
                                parameter-name
                                type                                    uri-host
                                action                                  replace
                                match-val-type                          any
                                comparison-type                         case-sensitive
                                match-value
                                new-value                               $LOCAL_IP

steering-pool
                ip-address                              192.168.1.100
                start-port                              16384
                end-port                                32767
                realm-id                                peer
                network-interface

steering-pool
                ip-address                              10.10.10.100
                start-port                              16384
                end-port                                32767
                realm-id                                enterprise-core-ccm
                network-interface
```

```
system-config
                hostname                                Enterprise
                description                             Enterprise-SD
                location
                mib-system-contact mib-
                system-name
                mib-system-location
                snmp-enabled                            enabled
                enable-snmp-auth-traps                  disabled
                enable-snmp-syslog-notify               enabled
                enable-snmp-monitor-traps               enabled
                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
                call-trace                              disabled
                internal-trace                          disabled
                log-filter                              all
                default-gateway                         192.168.1.1
                restart                                 enabled
                exceptions
                telnet-timeout                          0
                console-timeout                         0
                remote-control                          enabled
                link-redundancy-state                   disabled
```

Cisco UCM 6.x SIP to AT&T SIP with
Acme Packet 3000-4000 SBC
March 2014

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

oracle.com

Oracle is committed to developing practices and products that help protect the environment

Hardware and Software, Engineered to Work Together