



# Acme Packet – Lync – Level3 Interoperability Partner App Note

## Revision History

Version	Author	Description of Changes	Date Revision Completed
1.0	Andy Tatum	Initial Draft	1/31/2012

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## Abstract

*This document provides an overview of the Microsoft Lync Mediation Server Interoperability testing completed by Acme Packet Net-Net 3800 and Hewlett Packard UC-Connect through Level 3.*

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## 1 Introduction

Acme Packet Net-Net session border controllers (SBCs) provide critical control functions to enable enterprises to deliver trusted, first-class interactive communications across IP network borders. A broad range of interactive communications services and applications ranging from basic VoIP to service oriented architecture (SOA)-enabled unified communications (UC) and collaboration are supported.

This document aims to provide an overview of the interoperability testing between the Net-Net 3800 SBC and the HP UC-Connect Microsoft Lync environment with Level3.

### 1.1 Intended Audience

This document is intended for use by Acme Packet HQ and Field Based Engineers. It assumes the reader is familiar with basic operations of the Session Director, and has attended the following training course(s) (or has equivalent experience):

- EDU-CAB-C-CLI Net-Net 4000/3000 Configuration Basics
- EDU-ADV-OE Net-Net Session Director Advanced Configuration

Further, the test plans enclosed assume familiarity with the SD's ACLI command line interface, retrieving and reviewing log files generated by the SD, standard network analysis tools (wireshark/tcpdump), and all protocols involved in the activity.

## 2 Application Overview

The test cases provided in this document are specific to the HP UC Connect offering between Level 3 SIP Trunk offering and a hosted IP PBX environment. The tests reflect the HP Offering and isn't intended to be all encompassing test between MS Lync and Level 3.

### 3 Software/Hardware/Tools

#### 3.1 Net-Net SBC Hardware and Software Requirements

This section gives a high level view of system requirements and test tools/equipment used to research and test the feature outlined in this Tech Note.

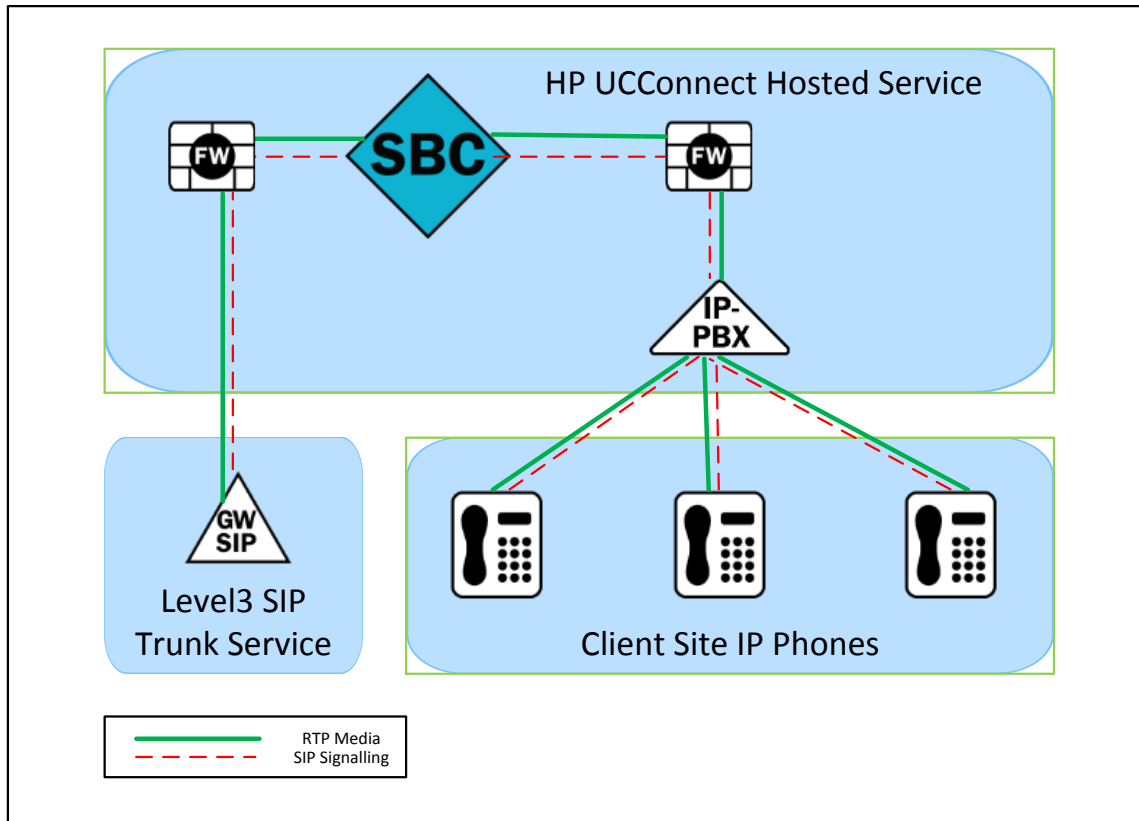
SBC Platform	Mainboard Rev.	Bootloader	Software Version/Patch
NN3820	5.00	08/11/2009	SCX6.2.0 MR-8

#### 3.2 Test Tool / Third Party Equipment used for Feature research and Testing

The following test tools and/or Third Party Equipment were used during for research and testing of the feature outlined in this Tech Note. **Where applicable; test tool usage instructions, including configuration overview, will be noted.**

Third Party Platform	Software Version/Patch
Microsoft Lync Mediation Server 2010 RTM	4.0.7557.0 No Service Pack

### 3.3 Test Bed Diagrams



#### 4 Lync SIP Trunk Test Cases and Use Cases

### Basic Calls

Verify operation of the basic calls between the Device Under Test ("DUT") and Microsoft Lync:

Test	Procedure	Expected Result	Test Comments	Mediation Server P/F	Mediation Bypass P/F
	Lync client makes an outbound to PSTN Phone PSTN answers call Lync client releases call	Verify PSTN phone rings Verify the call is connected Verify Call is cleared correctly Validate the signaling	Call is established successfully Call is answered with success Call is clear enough	P	P
2	PSTN Phone make an inbound call to Lync client Lync client answers the phone PSTN phone releases call	Verify PSTN phone rings Verify the call is connected Verify Call is cleared correctly Validate the signaling	PSTN phone rings as expected Call is connected successfully Lync client answers the call Call is clear Signaling is good	P	P
3	Lync client makes an outbound call to an invalid number DUT send the user not found message Lync releases call	Verify Lync client hears a ring back tone. Verify DUT sends a 404 Not Found to Lync Verify Lync displays the message that user is not found.	Unable to verify DUT sends 404 Got voice message that the number is not in service, please try again then hang up	P	P
4	Lync client makes an outbound call to a Busy PSTN user Place the PSTN phone in a busy mode (make it busy by calling another PSTN line) Lync client makes a call to PSTN phone Lync receives a busy message	Verify the PSTN phone is busy Verify DUT sends a 486 Busy Here Verify Lync will display the user busy message	Unable to verify DUT sends 468	P	P

5	Lync calls a PSTN user when the Mediation Server line is down UNplug the Mediation Server/E1 line from the DUT Lync calls PSTN user Call fails and Lync clears the call	Verify DUT sends 503 Service Unavailable to Lync Verify Lync displays the service outage message	Unable to verify DUT sends 503 Mediation Server line is not accessible for being located in remote site	N/T	N/T
6	PSTN phone call an INVALID Lync client DUT presents the call to Lync Lync fails the call PSTN is cleared	Verify Lync sends a 404 not found to DUT Verify DUT sends the correct cause code to PSTN network Verify the PSTN phone hears the fast busy and call is cleared properly	Unable to verify Lync sends 404 to DUT	P	P
7	PSTN phone calls a Lync client, which does not answer The DUT or network times out and releases the call	Verify the call is released after a timeout of less than 2 min.	The call is released within approximately 20 seconds	P	N/T
8	PSTN phone aborts the call PSTN call Lync client Lync client rings PSTN phone hangs up the call	Verify the Lync client is ringing Verify the call is cleared correctly by validating the signaling	Lync client rings Call is cleared correctly Signaling is good	P	P
9	Lync client aborts the call Lync calls PSTN user PSTN phone rings Lync releases call before PSTN user answers	Verify the PSTN phone is ringing Verify the call is cleared by validating the signaling	PSTN phone rings Call is cleared Signaling is good	P	P
10	DTMF: Make an outbound call to an IVR. Like United 800.433.7300 number. Input the digits	Verify the IVR call is connected Verify the DTMF digits input are recognized correctly.	IVR call is established successfully DTMF digit inputs are recognized correctly	P	P
11	DTMF: Make an inbound call to Conference Auto Attendant (CAA) Input digits to access the CAA	Verify the input digits are detected correctly by the CAA	Input digits are detected as expected	P	P

## Feature Calls

Verify operation of the feature calls between the Device Under Test ("DUT") and Microsoft Lync:

Test	Procedure	Expected Result	Test Comments	Mediation Server P/F	Mediation Bypass P/F
1	Lync Hold/Resume: Lync client calls PSTN user PSTN user answers call Lync put the call on Hold Lync resumes the call Lync releases the call	Verify the call is connected Verify the call is held and cut through when resumed Verify the call is released correctly Validate the signaling	Call is connected successfully Call is held and cut through when resumed as expected Call is released correctly Signaling is good	P	P
2	Lync Hold/Resume inbound call: PSTN calls Lync Lync answers Lync puts the call on hold Lync resumes the call PSTN releases call	Verify the call is connected Verify the call is held and cleared through when resumed Verify the call is released correctly Validate the signaling	Call is connected Call is held and cleared through when resumed as expected Call is released correctly Signaling is good	P	P
3	PSTN Hold/Resume: Lync calls PSTN PSTN answers call PSTN puts Lync on hold PSTN resumes call PSTN releases call	Verify the call is connected Verify the call is held and cleared through when resumed Verify the call is released correctly Validate the signaling	Call is connected Call is held and cleared through when resumed Call is released correctly Signaling is good	P	P
4	PSTN Hold/Resume: Outbound call Lync calls PSTN PSTN answers call PSTN puts Lync on hold PSTN resumes call PSTN releases call	Verify the call is connected Verify the call is held and cleared through when resumed Verify the call is released correctly Validate the signaling	Call is connected Call is held and cleared through when resumed Call is released correctly Signaling is good	p	P
5	Conference Call: Lync calls PSTN Lync escalates call to conference to another PSTN Presenter mutes/unmutes PSTN	Verify the escalation is successful Verify PSTN is muted when Lync mutes PSTN Verify PSTN can hear the conference announcement and mute/unmute announcement	Call is connected Escalation call is successful PSTN is muted when Lync mutes PSTN	P	P



	Call released		PSTN can hear the conference and mute/unmute announcement		
6	Conference Call: PSTN calls Lync1 Lync1 adds another Lync to conference Make Lync1 as the speaker Make Lync2 as the speaker Make PSTN as the speaker Terminate call	Verify the escalation is successful Verify the speaker is showing as speaking. Verify the call is cleared	Call is connected Escalation call is successful Conference call is connected successfully	P	P
7	Forward Call (part 1): Lync client #1 configures call forwarding to Lync client #2 on same LAN PSTN phone calls Lync #1  Forward Call (part 2): Lync client #1 configures call forwarding to Lync client #2 on different LAN separated by a WAN PSTN phone calls Lync #1	For both scenarios:  Lync#2, not Lync#1 rings Verify the call can be answered with Lync#2 and both parties hear the audio of the other Verify only one media stream exists for the duration of the call	Lync client 2 rings, Lync client 1 doesn't ring Call is forwarded to Lync client 2 directly Call can be answered by Lync 2	P	P
8	Transfer Call (part 1): PSTN phone calls Lync #1 Lync #1 answers call and transfers it to Lync client #2 on same LAN  Transfer Call (part 2): PSTN phone calls Lync #1 Lync #1 answers call and transfers it to Lync client #2 on different LAN separated by a WAN	For both scenarios:  Lync#1 rings, call is answered and manually transferred to Lync#2 Lync #2 answers call and both Lync #2 and PSTN phone parties hear each other Lync #1 departs the call Verify only one media stream exists for the remainder of the call Verify the call is released correctly when Lync #1 departs the call and same for when Lync #2 concludes the call	Call is connected Transfer call is connected successfully Call is clear	P	P

## Click-to-Calls

Verify operation of the feature calls among multiple Lync clients.

Test	Procedure	Expected Result	Test Comments	Mediation Server P/F	Mediation Bypass P/F
1	Lync client 1 calls Lync client 2 Click the phone icon to call Call is established automatically via Lync Phone Edition device Lync Phone Edition device is unavailable Call is established via Lync client	Verify the call is established successfully Verify the dial tone is clear Verify the call is connected via Lync client when the Lync Phone Edition device is unavailable	Call is established successfully Dial-tone is clear Call is connected via Lync client when there is no available Lync Phone Edition device	P	P

## Click to Conference

Verify operation of the feature calls among multiple Lync clients.

Test	Procedure	Expected Result	Test Comments	Mediation Server P/F	Mediation Bypass P/F
1	Lync client shares related content such as desktop.program, ppt, poll Other clients accept the sharing Lync client ends the sharing	Verify the remote contacts can receive the sharing Verify the sharing is clear enough Other Lync clients can join the meeting and see sharing Verify the sharing is ended successfully	The sharing is received successfully with remote contacts The shared content is clear The sharing is successful	P	P
2	Lync client sets up unscheduled online meeting with other clients Lync client logs into the meeting Lync client sends invitation to other Lync clients	Verify the online meeting can be established Verify the invitation is sent out Verify other Lync clients can receive the invitation	The online meeting is able to be established successfully other Lync clients can receive the invitation	P	P

	Other Lync clients accept the invitation Lync client sends e-mail invitation to the Lync clients inside or outside the company				
3	Lync client starts an unscheduled conference call Other Lync clients receive invitation Other Lync clients join the unscheduled conference call	Verify the unscheduled conference call can be established Verify other Lync clients can receive the invitation Verify other Lync clients can join the conference call successfully	The unscheduled conference call is set up with success Other Lync clients are able to receive the invitation Unscheduled conference call is connected successfully	P	P

## 5 Summary and Conclusion

### 5.1 Summary

No. of Lync Test Cases	Pass	Fail	N/S, N/T
25	24	0	1

### 5.2 Caveats

In this release there is no support for TLS or SRTP. TLS support is the default for Lync,

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## 9 Appendix – A Net-Net SBC Configuration

### 9.1 Net-Net SBC Sample Configuration

```
HP-DC1-SBC1# show running-configuration
host-routes
    dest-network          4.55.35.89
    netmask               255.255.255.255
    gateway               10.126.1.129
    description
    last-modified-by     admin@console
    last-modified-date   2011-11-10 16:18:46
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@192.168.50.1
    last-modified-date  2011-11-02 14:34:20
    policy-attribute
        next-hop          130.175.239.40
        realm             inside
        action            none
        terminate-recursion disabled
        carrier
        start-time        0000
        end-time          2400
        days-of-week      U-S
        cost              0
        app-protocol
        state             enabled
        methods
        media-profiles
        lookup            single
        next-key
        eloc-str-lkup     disabled
        eloc-str-match
local-policy
    from-address
                                *
    to-address
                                *
    source-realm
                                inside
    description
    activate-time        N/A
```



deactivate-time	N/A
state	enabled
policy-priority	none
last-modified-by	admin@192.168.50.1
last-modified-date	2011-11-11 19:33:08
policy-attribute	
next-hop	4.55.34.89
realm	outside
action	none
terminate-recursion	disabled
carrier	
start-time	0000
end-time	2400
days-of-week	U-S
cost	0
app-protocol	
state	enabled
methods	
media-profiles	
lookup	single
next-key	
eloc-str-lkup	disabled
eloc-str-match	
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
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
trap-on-demote-to-deny	disabled
syslog-on-demote-to-deny	disabled
syslog-on-demote-to-untrusted	disabled
min-media-allocation	2000
min-trusted-allocation	4000
deny-allocation	32000
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
media-supervision-traps    disabled
dnssalg-server-failover    disabled
last-modified-by           admin@192.168.50.1
last-modified-date         2011-11-17 17:51:47
network-interface
  name                      s0p0
  sub-port-id               0
  description
  hostname
  ip-address                 199.42.189.166
  pri-utility-addr
  sec-utility-addr
  netmask                   255.255.255.224
  gateway                   199.42.189.161
  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
  ssh-address
  signaling-mtu             0
  last-modified-by         admin@192.168.57.10
  last-modified-date       2011-10-11 16:28:43
network-interface
  name                      s1p0
  sub-port-id               0
  description
  hostname
  ip-address                 192.168.211.202
  pri-utility-addr
  sec-utility-addr
  netmask                   255.255.255.0
  gateway                   192.168.211.1
  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
ftp-address
icmp-address
snmp-address
telnet-address
ssh-address
signaling-mtu              0
last-modified-by          admin@192.168.57.10
last-modified-date        2011-10-11 16:39:19
phy-interface
  name                      s0p0
  operation-type            Media
  port                      0
  slot                      0
  virtual-mac
  admin-state               enabled
  auto-negotiation          enabled
  duplex-mode               FULL
  speed                     100
  overload-protection       disabled
  last-modified-by          admin@192.168.57.10
  last-modified-date        2011-10-11 16:01:07
phy-interface
  name                      slp0
  operation-type            Media
  port                      0
  slot                      1
  virtual-mac
  admin-state               enabled
  auto-negotiation          enabled
  duplex-mode               FULL
  speed                     100
  overload-protection       disabled
  last-modified-by          admin@192.168.57.10
  last-modified-date        2011-10-11 16:01:30
realm-config
  identifier                 outside
  description
  addr-prefix                4.55.34.89
  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
  qos-enable                  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	
media-sec-policy	
in-translationid	
out-translationid	
in-manipulationid	
out-manipulationid	
manipulation-string	
manipulation-pattern	
class-profile	
average-rate-limit	0
access-control-trust-level	none
invalid-signal-threshold	0
maximum-signal-threshold	0
untrusted-signal-threshold	0
nat-trust-threshold	0
deny-period	30
cac-failure-threshold	0
untrust-cac-failure-threshold	0
ext-policy-svr	
diam-e2-address-realm	
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
refer-notify-provisional	none
dyn-refer-term	disabled
codec-policy	
codec-manip-in-realm	disabled
constraint-name	
call-recording-server-id	
xnq-state	xnq-unknown
hairpin-id	0
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
sip-profile
sip-isup-profile
block-rtcp                disabled
hide-egress-media-update  disabled
last-modified-by          admin@192.168.50.1
last-modified-date        2011-11-17 16:52:56
realm-config
  identifier                inside
  description
  addr-prefix                130.175.239.40
  network-interfaces
    slp0:0
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
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
  media-sec-policy
  in-translationid
  out-translationid
  in-manipulationid
  out-manipulationid
  manipulation-string
  manipulation-pattern
  class-profile
  average-rate-limit        0
  access-control-trust-level none
  invalid-signal-threshold  0
  maximum-signal-threshold  0
  untrusted-signal-threshold 0
  nat-trust-threshold       0
  deny-period                30
  cac-failure-threshold     0
  untrust-cac-failure-threshold 0
  ext-policy-svr
  diam-e2-address-realm
  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	enabled
refer-notify-provisional	none
dyn-refer-term	disabled
codec-policy	
codec-manip-in-realm	disabled
constraint-name	
call-recording-server-id	
xnq-state	xnq-unknown
hairpin-id	0
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	
sip-profile	
sip-isup-profile	
block-rtcp	disabled
hide-egress-media-update	disabled
last-modified-by	admin@192.168.50.1
last-modified-date	2011-12-07 22:53:03
session-agent	
hostname	130.175.239.40
ip-address	130.175.239.40
port	5067
state	enabled
app-protocol	SIP
app-type	
transport-method	StaticTCP
realm-id	inside
egress-realm-id	
description	
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
ping-interval	90
ping-send-mode	keep-alive
ping-all-addresses	disabled
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	
manipulation-pattern	
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
refer-notify-provisional	none
reuse-connections	NONE
tcp-keepalive	none
tcp-reconn-interval	0
max-register-burst-rate	0
register-burst-window	0
sip-profile	
sip-isup-profile	
last-modified-by	admin@192.168.50.1
last-modified-date	2011-11-08 11:16:34
session-agent	
hostname	4.55.34.89
ip-address	4.55.34.89
port	5070

state	enabled
app-protocol	SIP
app-type	
transport-method	StaticTCP
realm-id	outside
egress-realm-id	
description	
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
ping-interval	90
ping-send-mode	keep-alive
ping-all-addresses	disabled
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	NAT_External
manipulation-string	
manipulation-pattern	
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
refer-notify-provisional none
reuse-connections NONE
tcp-keepalive none
tcp-reconn-interval 0
max-register-burst-rate 0
register-burst-window 0
sip-profile
sip-isup-profile
last-modified-by admin@console
last-modified-date 2011-11-08 16:20:24
sip-config
state enabled
operation-mode dialog
dialog-transparency enabled
home-realm-id outside
egress-realm-id
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 disabled
registration-cache-limit 0
register-use-to-for-lp disabled
options inmanip-before-validate
refer-src-routing disabled
add-ucid-header disabled
proxy-sub-events
allow-pani-for-trusted-only disabled
pass-gruu-contact disabled
sag-lookup-on-redirect disabled

```

```

set-disconnect-time-on-bye disabled
last-modified-by admin@192.168.50.1
last-modified-date 2011-11-17 17:20:52
sip-interface
state enabled
realm-id outside
description
sip-port
address 199.42.189.166
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
out-manipulationid
manipulation-string
manipulation-pattern
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           none
implicit-service-route   disabled
rfc2833-payload         101
rfc2833-mode            transparent
constraint-name
response-map
local-response-map
ims-aka-feature          disabled
enforcement-profile
route-unauthorized-calls
tcp-keepalive           none
add-sdp-invite          disabled
add-sdp-profiles
sip-profile
sip-isup-profile
tcp-conn-dereg          0
last-modified-by        admin@192.168.50.1
last-modified-date      2011-11-17 17:14:06
sip-interface
state                   enabled
realm-id                inside
description
sip-port
    address              192.168.211.202
    port                  5061
    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
out-manipulationid
manipulation-string

```

```

manipulation-pattern
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                 none
implicit-service-route         disabled
rfc2833-payload                101
rfc2833-mode                   transparent
constraint-name
response-map
local-response-map
ims-aka-feature                disabled
enforcement-profile
route-unauthorized-calls
tcp-keepalive                  none
add-sdp-invite                 disabled
add-sdp-profiles
sip-profile
sip-isup-profile
tcp-conn-dereg                 0
last-modified-by               admin@192.168.50.1
last-modified-date             2011-11-17 17:14:45
sip-manipulation
  name                          NAT_External
  description                    Manipulate SIP headers sent to Level3
  split-headers
  join-headers
  header-rule
    name                          From
    header-name                    From
    action                          manipulate
    comparison-type                 case-sensitive
    msg-type                         request
    methods                          INVITE
    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
      new-value                       $LOCAL_IP
    element-rule

```

	name	RmvEpid
	parameter-name	epid
	type	header-param
	action	delete-element
	match-val-type	any
	comparison-type	case-sensitive
	match-value	
	new-value	
header-rule		
	name	To
	header-name	To
	action	manipulate
	comparison-type	case-sensitive
	msg-type	request
	methods	INVITE
	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	
	new-value	\$REMOTE_IP
header-rule		
	name	RUri
	header-name	request-uri
	action	manipulate
	comparison-type	case-sensitive
	msg-type	request
	methods	INVITE
	match-value	
	new-value	
	element-rule	
	name	RUri
	parameter-name	
	type	uri-host
	action	replace
	match-val-type	any
	comparison-type	case-sensitive
	match-value	
	new-value	\$REMOTE_IP
header-rule		
	name	RmvExt
	header-name	From
	action	manipulate
	comparison-type	case-sensitive
	msg-type	any
	methods	
	match-value	
	new-value	
	element-rule	
	name	RmvExt
	parameter-name	ext
	type	uri-user-param

	action	delete-element
	match-val-type	any
	comparison-type	case-sensitive
	match-value	
	new-value	
header-rule		
	name	RmvContactExt
	header-name	Contact
	action	manipulate
	comparison-type	case-sensitive
	msg-type	any
	methods	
	match-value	
	new-value	
	element-rule	
	name	RmvContactExt
	parameter-name	ext
	type	uri-user-param
	action	delete-element
	match-val-type	any
	comparison-type	case-sensitive
	match-value	
	new-value	
	element-rule	
	name	RmvURIUser
	parameter-name	
	type	uri-user
	action	delete-element
	match-val-type	any
	comparison-type	case-sensitive
	match-value	
	new-value	
	element-rule	
	name	RmvMsOp
	parameter-name	ms-opaque
	type	uri-param
	action	delete-element
	match-val-type	any
	comparison-type	case-sensitive
	match-value	
	new-value	
	element-rule	
	name	RmvTspt
	parameter-name	transport
	type	uri-param
	action	delete-element
	match-val-type	any
	comparison-type	case-sensitive
	match-value	
	new-value	
	last-modified-by	admin@192.168.50.1
	last-modified-date	2011-11-16 12:34:58
steering-pool		
	ip-address	199.42.189.166
	start-port	21000
	end-port	21140
	realm-id	outside

```

network-interface
last-modified-by          admin@192.168.50.1
last-modified-date       2011-11-17 18:16:57
steering-pool
ip-address                192.168.211.202
start-port               20000
end-port                 20140
realm-id                 inside
network-interface
last-modified-by          admin@192.168.50.1
last-modified-date       2011-11-17 18:06:18
system-config
hostname
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          0.0.0.0
restart                  enabled
exceptions
telnet-timeout           0
console-timeout          0
remote-control           enabled
cli-audit-trail          enabled
link-redundancy-state    disabled
source-routing           disabled
cli-more                 disabled
terminal-height          24
debug-timeout            0
trap-event-lifetime      0
default-v6-gateway       ::

```

```
ipv6-support                disabled
ipv6-signaling-mtu         1500
ipv4-signaling-mtu         1500
cleanup-time-of-day        00:00
last-modified-by           admin@192.168.50.1
last-modified-date         2011-11-04 16:55:21
task done
acme3820Lync-WPS1#
```