



Configuration Guide for Integration of Spectralink PIVOT with UNIVERGE® 3C

Version 1.0
December 19, 2014

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Acronyms

AD: Active Directory

CLI: Command Line Interface

CAS: Channel Associated Signaling

DHCP: Dynamic Host Configuration Protocol

DID: Direct Inward Dialing

DNS: Domain Name Service

IP Address: A unique 32 bit address that identifies a TCP/IP node on an IP network.

LAN: Local Area Network.

NAT: Name address translation

MWI: Message waiting Indicator

PBX: Private Branch Exchange.

PSTN: Public Switched Telephone Network

SSG: Survivable SIP Gateway

SIP: Session Initiation Protocol.

SNMP: Simple Network Management Protocol

TCP: Transmission Control Protocol.

UA: User Agent

UC: Unified Communication

UDP: User Datagram Protocol

VLAN: Virtual Local Network

WAN: Wide Area Network.

Purpose of this Document

This document is intended as a quick start guide for NEC's UNIVERGE® 3C integration with Spectralink PIVOT (87-Series). It lists the steps involved in configuring Spectralink PIVOT Wireless handsets in Univerge 3C system and the supported features.

Prior knowledge of WLAN networking and how to connect the Spectralink PIVOT handset to wireless network will be necessary in order to access the network medium for registering handset to UNIVERGE® 3C UCM. For detailed and extensive WLAN configuration needs, please refer to Spectralink PIVOT deployment guides located at (<http://support.spectralink.com/pivot>) .

Scope of this document

This document demonstrates how to configure a Spectralink PIVOT (87-Series) to connect to NEC's UNIVERGE® 3C UCM and avail the Unified Communication (UC) features.

This configuration and integration test was verified on the following versions:

1. UNIVERGE® 3C UCM version 8.5.3.11
2. Spectralink PIVOT Model 8741 (See Appendix 1 for details)

Configuration

Spectralink PIVOT SIP User Agent

Determine SIP User Agent String for Spectralink PIVOT

UNIVERGE® 3C uses SIP User Agent string to identify the stations capabilities. UNIVERGE® 3C enforces the SIP User agent string match as one of the many forms security features built into the system.

In Order for Spectralink PIVOT handsets to successfully register to UNIVERGE® 3C UCM, the SIP User Agent string needs to be determined and added to the system. An easy way to determine this is by looking at the SIP REGISTER packet from the PIVOT handset using Wireshark, as shown below:

```

1 2014-12-18 10:19:32.108740 192.168.140.141 192.168.140.50 SIP 570 Request: REGISTER sip:192.168.140.50
2 2014-12-18 10:19:32.145343 192.168.140.50 192.168.140.141 SIP 576 Status: 200 OK (1 bindings)

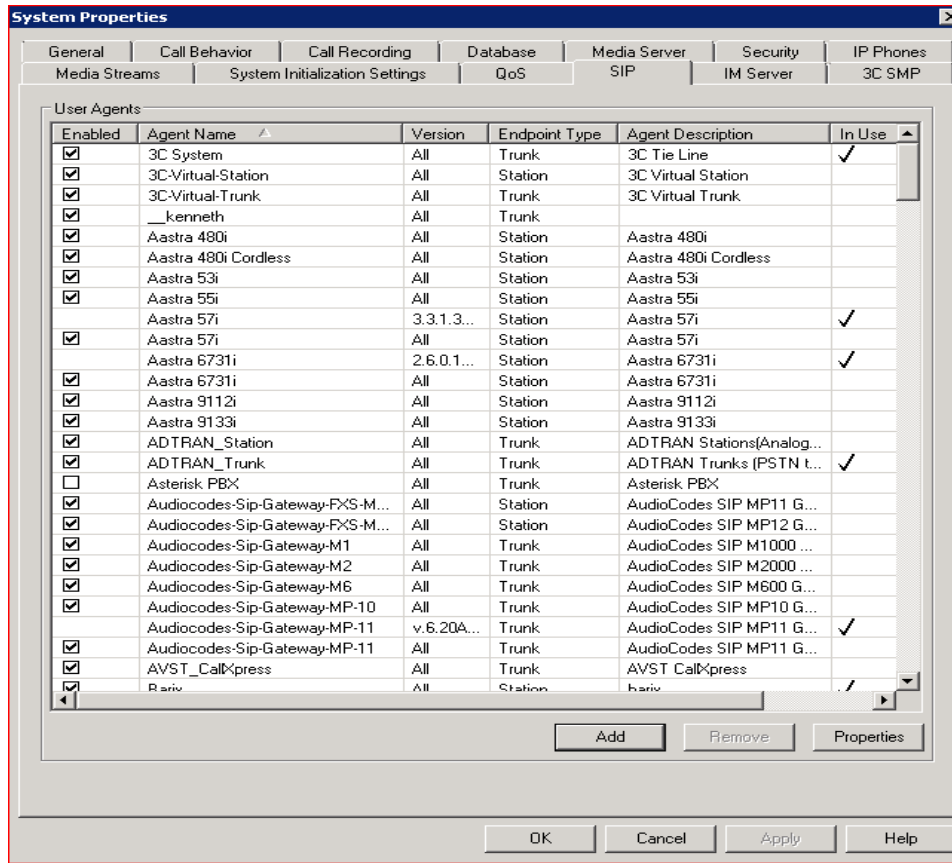
Frame 1: 570 bytes on wire (4560 bits), 570 bytes captured (4560 bits)
Ethernet II, Src: Polycom_16:40:3a (00:90:7a:16:40:3a), Dst: Dell_9b:17:5f (00:21:9b:9b:17:5f)
Internet Protocol Version 4, Src: 192.168.140.141 (192.168.140.141), Dst: 192.168.140.50 (192.168.140.50)
User Datagram Protocol, Src Port: sip (5060), Dst Port: sip (5060)
Session Initiation Protocol
  Request-Line: REGISTER sip:192.168.140.50 SIP/2.0
  Message Header
    Via: SIP/2.0/UDP 192.168.140.141:5060;rport;branch=z9hG4bKpjFu7ZpxvLY9wIKz5vfvAa2xkBiGa2Vj8G
      Max-Forwards: 70
    From: <sip:4700@192.168.140.50>;tag=FJrtsG9m7Jw1f01by9zwtSbP5pAhaMCS
    To: <sip:4700@192.168.140.50>
      Call-ID: Nh7RbsGgC7Up6MLA1x8Gpm75Z9h76Lx.
    CSeq: 31079 REGISTER
    User-Agent: Spectralink-UA_0_4_4
    Contact: <sip:4700@192.168.140.141:5060;ob>
      Expires: 300
    Allow: PRACK, INVITE, ACK, BYE, CANCEL, UPDATE, INFO, SUBSCRIBE, NOTIFY, REFER, MESSAGE, OPTIONS
    Content-Length: 0
  
```

In most cases the SIP User Agent (UA) string remains the same for a particular firmware version on the handset. Upon handset firmware change, the UA string may change as it typically includes the firmware version numbers. Univerge 3C reads the firmware version from UA string if it is separated by a forward slash “/”. A minimal match (e.g. Spectralink-UA_) can be used for PIVOT handsets, however it leaves room for ambiguity. So it is a good practice to check the UA string for each firmware version in PIVOT and configure it in its entirety for a full match.

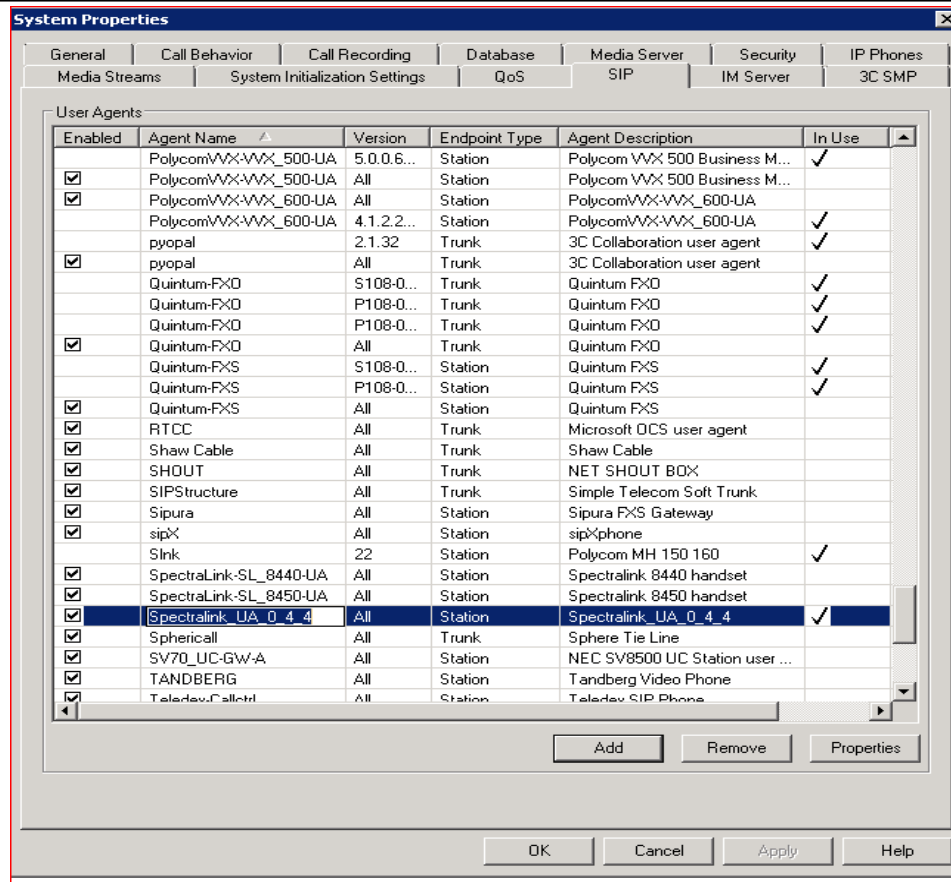
Adding SIP User Agent in UNIVERGE® 3C

To add the SIP user agent in 3C, follow the below steps:

1. In the UNIVERGE® 3C UCM Administrator, go to System Properties and select SIP tab.



2. Click "Add" and add new SIP User Agents with the following value: "Spectralink_UA_0_4_4" as shown below. Make sure the Endpoint type is set as "Station".

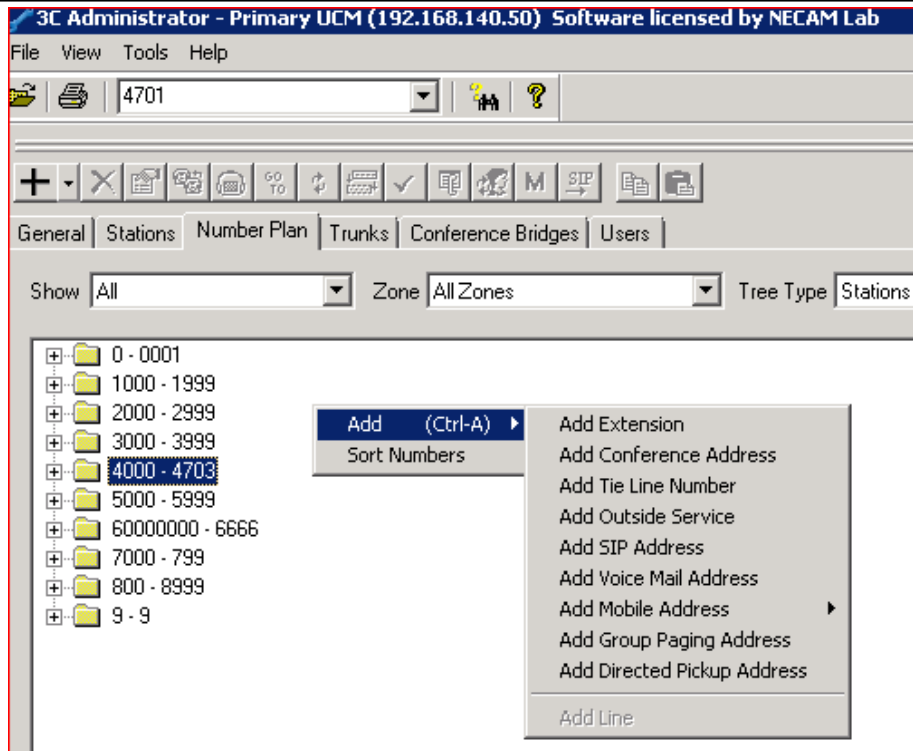


3. Certain User Agent properties need to be modified for interoperability with PIVOT handset. Go to the Properties of the newly added user agent and change the following:
 - a. Auto Switch To TCP = Unsupported.
 - b. MediServer MAX Packetization = 20 ms

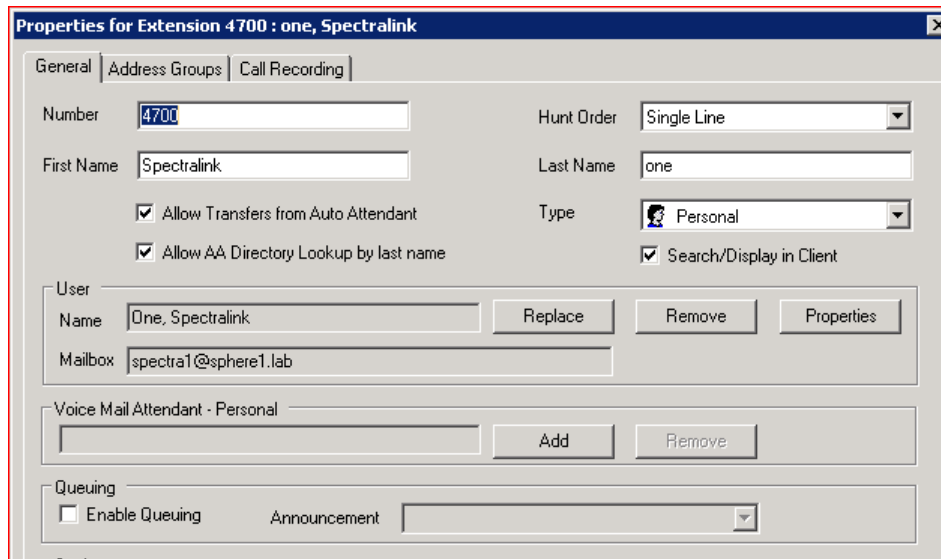
Configure an Extension in 3C

For best practices, it is always a good idea to use the UNIVERGE® 3C extension number as the SIP user name in the Spectralink PIVOT handset registration. So before configuring the Spectralink PIVOT handset, first create an extension in UNIVERGE® 3C UCM.

1. Go to Number Plan tab, right click and select “Add Extension”.



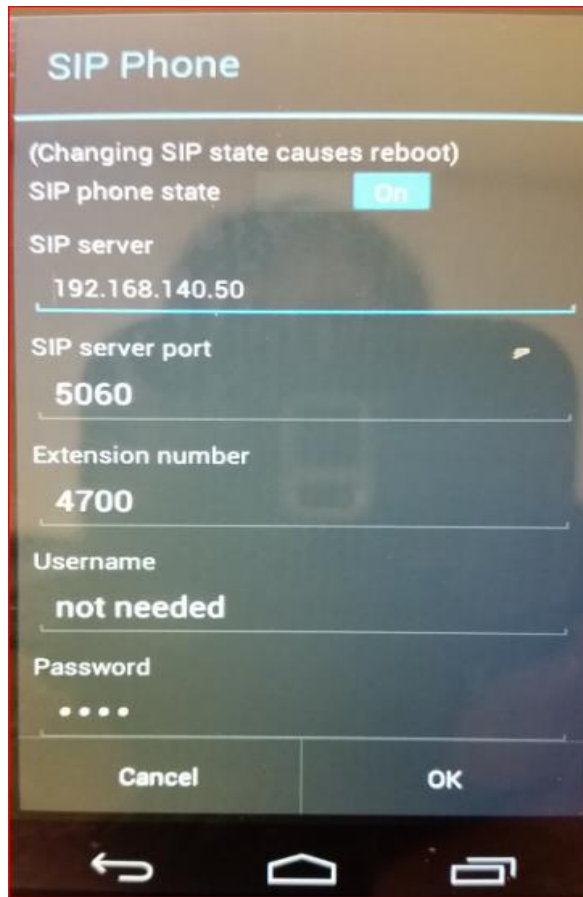
2. The following properties dialog box appears. Please fill up the details per your numbering plan. In this example we have assigned 4700 to the Spectralink PIVOT handset.



3. Add the user name (by importing from the Active Directory), and click OK

Configure Spectralink PIVOT handset

1. On the Spectralink PIVOT handset, go to Settings → Admin Settings. Enter password (default is “admin”)
2. Under Spectralink Settings, select SIP Phone and configure as below :

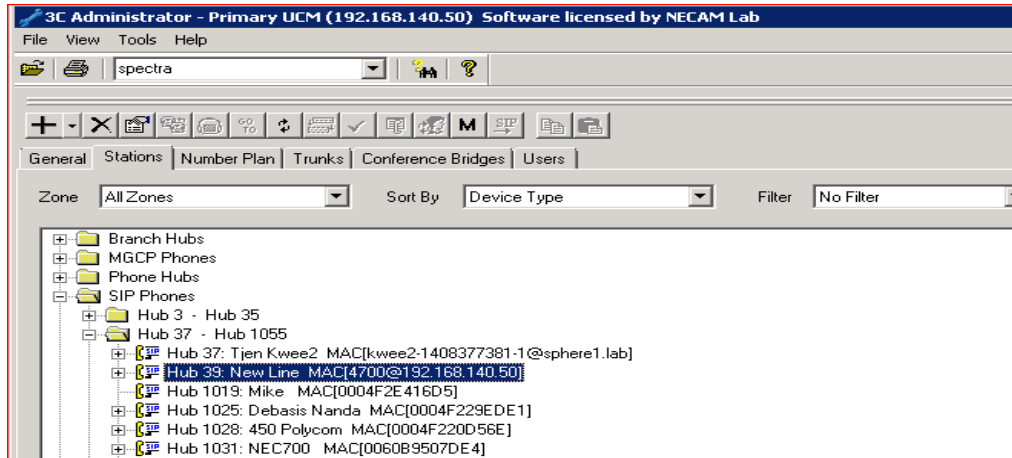


3. SIP Server as your UNIVERGE® 3C UCM's IP address
SIP Server Port as 5060
Extension number as the extension number configured in 3C Administrator (e.g.4700)
Set both Username and Password as 4700.
4. Leave all other parameter with default value and click OK.

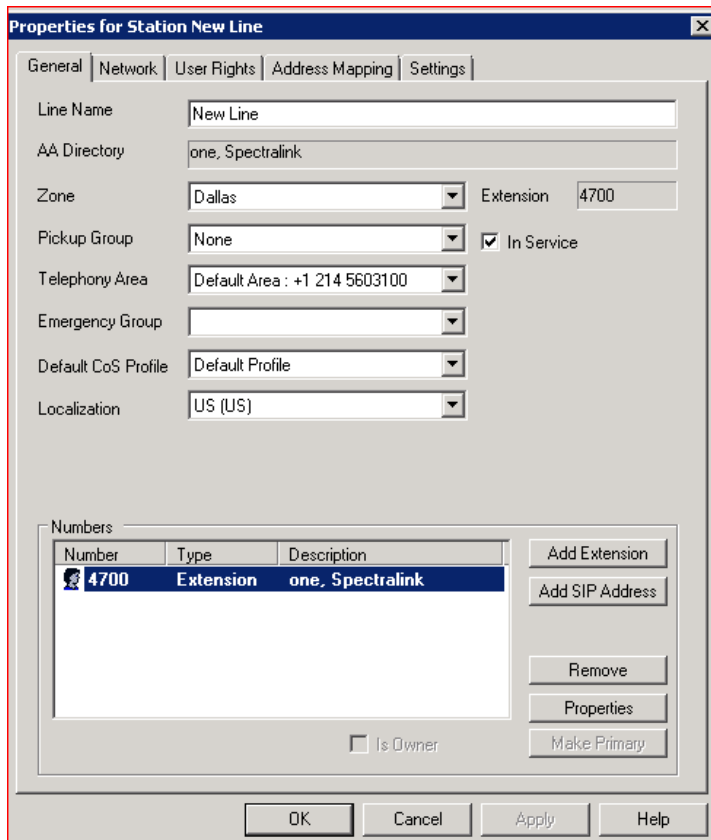
Now the Spectralink PIVOT phone will register with UNIVERGE® 3C UCM. Use the SIP Status application on Spectralink PIVOT handset to check the registration state.

Complete the Spectralink PIVOT phone configuration in UNIVERGE® 3C.

1. Once the phone successfully registers with Univerge 3C UCM, it will show up under the stations tab. Locate the hub corresponding to this registration:



2. Go to the properties of the “hub” and add the extension number created before (e.g. 4700)





For simplicity, this configuration uses default Zone, Pickup Group (if any), telephony Area, and Class of Service (CoS) profile. To fine tune all these parameters, please refer to Book 2: Install and Configure the UNIVERGE® 3C system.

Now the Spectralink PIVOT phone should be ready for use.

Supported Features:

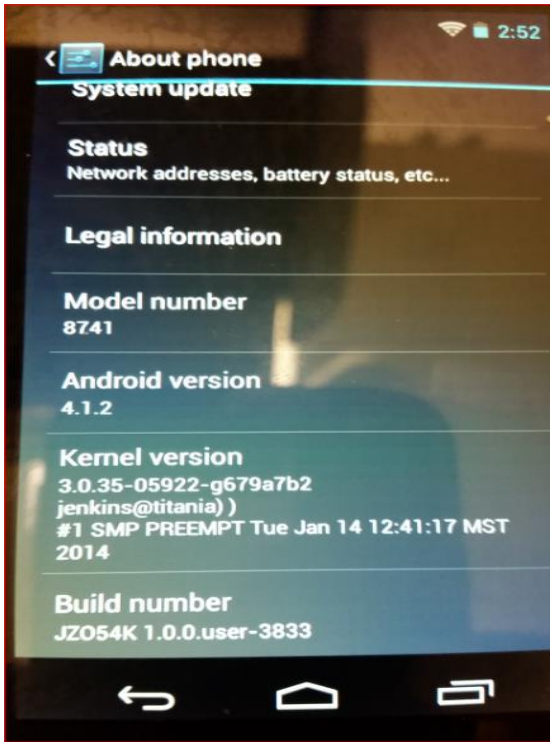
The following features were tested to be supported on UNIVERGE® 3C system.

Features Tested	Pass/Fail	Remark
Receive calls from 3C station	Pass	
Place calls to other 3C station	Pass	
Receive calls from trunk	Pass	ISDN trunk using CO Hub
Place outbound calls over trunk	Pass	ISDN trunk using CO Hub
Message Waiting Indication (MWI)	Pass	Internal 3C Voicemail with Exchange storage.
Call Waiting	Pass	Answer 2 nd call while putting the first on hold.
Conference: 3-way	Pass	
Split / Broker Call	Pass	
Hold and Resume	Pass	
Transfer: Blind	Pass	
Caller ID	Pass	
Name Display	Pass	
Call Reject	Pass	
MOH-Trunk Call: Spectra put call on hold	Pass	
MOH-Trunk Call: Trunk put call on hold	Pass	
MOH-Station-to-Station Call	Pass	
Forward All Calls	Pass	Using System Star Code for forward all calls and continue to offer calls
Do Not Disturb	Pass	Using System Star Code for DND
Voice Announce	Pass	Using System Star Code
DTMF support (RFC 2833)	Pass	
Codec Support for G.711 and G.729	Pass	

Conclusion

This completes the configuration of Spectralink PIVOT on the UNIVERGE® 3C platform.

Appendix A: Spectralink PIVOT Version:



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