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Application Notes for Bittel Kingstar BT-2008 SIP Telephones with Avaya Communication Server 1000E Rel 6.0 – Issue 1.0

Abstract

These Application Notes describe how to configure a Bittel Kingstar BT-2008 SIP telephone (model 67IP-T10) to interwork with an Avaya Communication Server 1000E (release 6.0) as a SIP Line Universal Extension endpoint (UEXT) registered to the Avaya Communication Server 1000E SIP Line Gateway. The Avaya Communication Server 1000E embedded SIP Line service extends existing networking and line services to supported SIP clients and facilitates the use of 3rd party SIP telephones.

Information in these Application Notes has been obtained through DevConnect Compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

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1. Introduction

These Application Notes describe the validated test configuration for a Bittel Kingstar BT-2008 SIP telephone (model 67IP-T10) with an Avaya Communication Server 1000E (software version 6.0). The 67IP-T10 is a two line SIP telephone with 10 programmable service keys, hands free operation and 2 built in Ethernet ports. This particular model is intended for the hospitality market as an analog telephone replacement. It lacks an alphanumeric display, all telephone programming is performed using a web browser and a built in web server. The telephone has a Message Waiting Indicator which is compatible with Avaya CallPilot™ Unified Messaging. Common telephone functions such as mute, redial and hold have dedicated buttons.

The 67IP-T10 telephone is configured on the Avaya Communication Server 1000E as a SIP Line Universal Extension endpoint (UEXT). Avaya Communication Server 1000E SIP Line services allow a SIP telephone to register with a local SIP server and receive a subset of telephone services as well as line appearance on the Avaya Communication Server 1000E. Not all Avaya Communication Server 1000E services and features are available to 3rd party SIP telephones; the objective of this Application Notes is to document which Avaya Communication Server 1000E features work with the Bittel 67IP-T10 telephone and to report compliance test results.

2. General Test Approach and Test Results

These subsections describe the results of tests executed on the 67IP-T10 telephone, using the test configuration as detailed in **Figure 1**. It was observed during testing that altering settings in some web pages required the telephone to restart, where as changing similar setting in other web pages did not trigger a restart. To ensure consistency, the 67IP-T10 was restarted manually after a configuration change was made. Where a particular feature was present on both the 67IP-T10 and the CS 1000E, it was tested in either setting and any interaction or deviations from the expect results was reported. In the ensuing test cases the variety of telephones used are identified as follows:

Phone 1 = Bittel 67IP-T10 SIP Phone at extension 2000
Phone 2 = Bittel 67IP-T10 SIP Phone at extension 2001
Phone 3 = Bittel 67IP-T10 SIP Phone at extension 2002
Phone 4 = Avaya 1140 IP telephone at extension 2010
Phone 5 = Avaya M3904 digital telephone at extension 2011
Phone 6 = Avaya 1140 SIP telephone at extension 2012

2.1. **Interoperability Compliance Testing**

SIP Line operation on a CS1000E requires the activation of the SIP Line service on a signaling server and is dependant of the following packages being present in the call server keycode file.

Package Mnemonic	Package number	Package description	Comment
SIP_LINES	417	SIP Line Service	Basic package
SIPL_3RDPARTY	416	Third-party SIP Line package	Package for non Avaya SIP telephones
SIPL_NORTEL	415	Avaya SIP Line package	For Avaya SIP telephones
FFC	139	Flexible Feature Codes	Needed for special features, e.g., Call Forward All Calls.

The CS 1000E SIP Line Gateway (SLG) application can be installed as a co-resident or standalone configuration, SIP Line UEXT operation and configuration is the same in either situation. For the purposes of this application note, the SLG was installed using a standalone server. The 67IP-T10 telephone was configured with system default settings for a standard 3rd party SIP telephone, except where a unique entry was required (e.g., telephone number). A subset of default call features was tested including, but not limited to:

- Call Forward (busy, no answer, unconditional)
- Transfer (attended and unattended)
- Conference (3 party)
- Call Park

In addition, a range of voice codec's were tested. Basic 67IP-T10 telephone IP and feature configuration prior to registration on the Communication Server 1000E was tested. Default 67IP-T10 settings were used, except where highlighted.

2.2. **Test Results**

The following observations were made during 67IP-T10 testing.

- **67IP-T10 does not have an answer supervision feature when using hands free mode.**
  When a call is placed to the 67IP-T10 and the call is answered using the Line 1 key, the caller's voice will be heard on loudspeaker. When the caller hangs up, the 67IP-T10 phone responds with "*busytone*" for approx. 30 seconds, and then sounds "*number unobtainable*" tone for approx. 45 seconds, then goes silent. The LED on the speaker key stays illuminated. On subsequent incoming calls, the 67IP-T10 will not sound an alerting tone; however the Line 1 LED will flash. This operation was confirmed as normal behavior by Bittel.
- **G.729 codec not interworking with TDM or UNIStim phones**.

If the 67IP-T10 is configured to only use the G.729 codec & calls are made to UNIStim or TDM telephones, the calls fail with a SIP error 403 (= forbidden). Calls to/from a SIP telephone work as expected.

- **67IP-T10 call transfer fails.**
  If an established call on a 67IP-T10 telephone is transferred to another telephone, using the **Hold** and **Flash** keys, the call drops and "*dial tone*" is heard. This problem occurs for both attended and unattended transfers.

- **DTMF over IP results vary depending on which DTMF signaling method is configured.**
  The 67IP-T10 default setting is RFC2833. INFO-type & DTMF-relay settings may need to be set for calls over TDM trunks or to particular IVR equipment.

- **CS 10000E feature Call Forward Busy Allowed does not work.**
  This CS1000E feature is configured in the telephone class of service, when this is set to "FBA', the caller gets '*busytone*' if they call a 67IP-T10 telephone which has an established call. A workaround is to use the 67IP-T10's built in Call Forward Busy feature (see 67IP-T10 VOIP Page →Advanced Settings page).

- **Conferencing feature requires a second line**
  The 67IP-T10 cannot use the CS1000E's built in conferencing service and requires a second SIP line to enable this feature. This release of CS1000E software only allows one SIP line per user.

2.3. **Support**

The 67IP-T10 is manufactured by Bittel Electronics and the contact details are as follows:

Bittel Electronics
No.1 Rizhao North Road,
Rizhao,
Shandong,
China, 276800
Tel: +86 633 2212125
Fax: +86 633 2212118
Email: sales@bittelcom.com
Web site: www.bittelcom.com

3. Reference Configuration

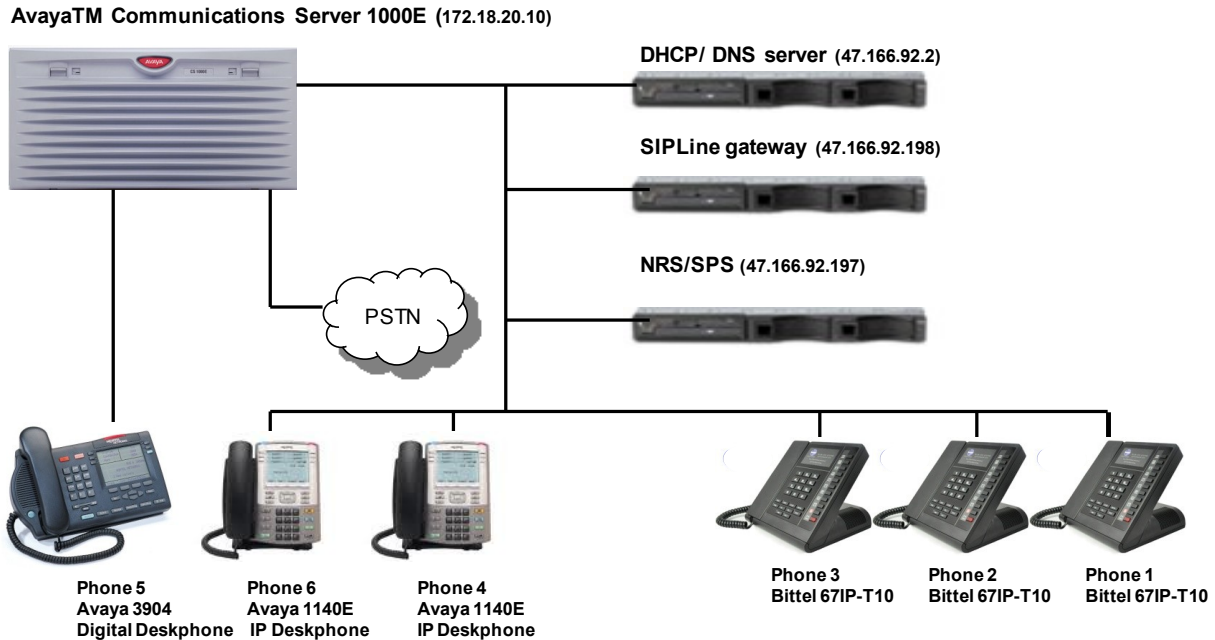The following diagram shows the network configuration used for all test cases in the Test Plan.

Figure 1: Test Configuration for Avaya Communication Server 1000E and Bittel 67IP-T10

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4. Equipment and Software Validated

The following equipment and software were used for the sample configuration provided:

Hardware Component	Software / Firmware Version
Avaya Communication Server 1000E (Call Processor Pentium Mobile)	Avaya Communication Server 1000E 06.00R / 6.00.20.00 (PSWV 100 with latest Patches and Deplist)
Avaya Communication Server 1000E Media Gateway	CSP Version: MGCC AO01 MSP Version: MGCM AB01 APP Version: MGCA AA07 FPGA Version: MGCF AA15 BOOT Version: MGCB AL60 DSP1 Version: DSP1 AB01 DSP2 Version: DSP2 AB01
Avaya 1100 series IP Telephones • 1140e • 1120e Avaya M3900 series Telephones • M3904 Avaya 1100 series SIP Telephone • 1140	0625C7M (UNIStim 4.2) 0624C7M (UNIStim 4.2) Version: AA93 SIP 2.2 - 1120 2.02.21.00
Bittel Kingstar BT-2008 SIP Phones (model 67IP-T10)	Ver 0.43.018

5. Configure Avaya Communication Server 1000E SIP Line

This section describes the steps required to configure the Avaya CS1000E SIP Line application using CS 1000 Element Manager. A command line interface (CLI) option is also available to provision the SIP Line application on CS 1000E system. For detailed information, see item **[6]** in **Section 9** of this document.

5.1. Prerequisite

A Communication Server 1000E application server which has been:
- Installed with CS 1000 Release 6.0 Linux Base
- Joined CS 1000 Release 6.0 Security Domain
- Deployed with SIP Line Application

For information on installing and configuring Communication Server 1000E, see item **[3]** in **Section 9** of this document.

5.2. **Configure Codec's**

It is necessary to confirm the required voice codec's are selected and relevant parameters are correct. Log in to Element Manager (for detailed information on this task, see item **[3]** in **Section 9***)* and navigate to the **System → IP Network → IP Telephony Nodes** page. Click on the node number and select the **Voice Gateway (VGW) and Codecs** property page. The following screen shot shows the codec settings used during the 67IP-T10 compliance test.

Figure 2: CS 1000E codec selection.

5.3. **SIP Line Parameters**

In Element Manager, navigate to **Customers** → (*customer number*) and click on **SIP Line Service**. The **Root Domain** entry is typically the system NRS SIP Domain.

Figure 3: CS 1000E SIP Line Service activation.

In Element Manager, navigate to **System** → **IP Networks** → **IP Telephony Nodes** and select **SIP Line Configuration Details**. The **SIP Domain** value is as previously entered. The **SLG SIP Local SIP Port** value is **5070**. Save and synchronize to ensure the new configuration is retained.

Figure 4: CS 1000E SIP Line configuration.

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When finished configuring the SIP Line application, use the following screenshot to confirm the procedure was successful and that the application is enabled.

Figure 5: CS 1000E Node configuration completed.

5.4. Configure Avaya Communication Server 1000E SIP Line Extension(s)

Before registering SIP telephones, it is necessary to manually configure the CS 1000E with (at a minimum) the following settings for each SIP telephone extension planned:

- SIP User Name (normally same as the telephone number)
- Directory Number (the users telephone number)
- Universal Agent Directory Number (UADN – a unique identifier)
- Station Control Password (SCPW – nominally the telephone number)

CS 1000E Element Manager Phones provisioning is the preferred way to configure telephones. Select the **Phones** link (highlighted in the next screenshot) from the Element Manager Navigation sidebar and click the **Add** button. This brings up the **New Phones** screen. As values may differ between installations, in this configuration the following values were used:

- **Number of phones** is 1
- **Customer** is 0

Click the **Phone Type** radio button and select **UEXT-SIPL → Universal Extension SIPL** from the drop down list (see highlighted area in the next screenshot). Default values were used for the remaining parameters on this property page.

Figure 6: CS 1000E Add a New Telephone.

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Click on the **Preview** button (highlighted) to bring up the **Phone Details** page. Values chosen in the previous page will be propagated and default values will be assumed for several options. The following values were used on this page:

- **Terminal Number** = 96 0 0 20
- **Designation** = Bittel
- **Zone** = 1
- **Sip User Name** = 4052
- **Node Id** = 1

Click on **Optional Features Max Client Count.**

- **SIPN** = 0
- **SIP3** = 1
- **FMCL** = 0
- **TLSV** = 0

When finished populating the required values, scroll down to the **Features** property page (highlighted in next figure).

Figure 7: CS 1000E Phone Details.

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The features property page (see below) allows setting of telephone features such as call forwarding and presentation of caller line ID. Many features have a default value (e.g., allowed/denied), some require numeric parameters.

Figure 8: CS 1000E Phone Features.

The following values and settings were used in this test configuration:-

Feature	Description	Value
CFXA	Call Forward External	Allowed
CNDA	Call Party Name Display	Allowed
DDGA	Present/Restrict Calling Number	Allowed
DNDA	Dialed Number Name Display	Allowed
FBA	Call Forward Busy for DID Calls	Allowed
FNA	Call Forward No Answer	Allowed
HTA	Hunting	Allowed
NCOS	Network Class of Service	0
SCPW	Station Control Password	4052
MWA	Message Waiting Class of Service	Allowed
TGAR	Trunk Group Access Restriction	0

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Scroll down to the **Keys** property page (see **Figure 9**). Select **SCR – Single Call Ringing** from the **Key 0 - Key Type** drop down list, this will enable further **Key Value** property settings on the right side of the page. For this configuration, the value 4052 was chosen as the telephone **Directory Number**. Click on the **Multiple Appearance Redirection Prime** (MARP) checkbox and type a user name and choose the required **Display Format** and **Language** character options. Select the **Key 1 - Key Type** drop down list and choose **HOT_U – Hotline (Universal)**. In the **UADN** box, the value is a concatenation of the **User agent DN prefix** (see section 5.3-figure 3, value = 15 in this example) and the telephone **Directory Number** (value = 4052 in this case).

Figure 9: CS 1000E Phone Keys.

When finished entering all required values, scroll down to the page end and press the **Validate** button. If no errors are reported, click on the **Save** button. This completes the CS 1000E SIP Line configuration for Bittel BT-67IP-T10 SIP telephones.

6. Configure the Bittel 67IP-T10 telephone

The Bittel 67IP-T10 telephone requires an Internet web browser to configure the telephone parameters for correct operation with a CS 1000E. No particular HTML browser is specified in the 67IP-T10 User Guide, Microsoft Internet Explorer 8 and Firefox 3.5 have been used successfully. Please refer to the phone User Guide (item **[7]** in **Section 9** of this document) for complete instructions on how to operate the 67IP-T10 telephone and a detailed listing of all available telephone features. The following procedure will describe how to register a 67IP-T10 with a CS 1000E.

The 67IP-T10 lacks a display, but does provide a facility to speak the telephone IP address. Power up the 67IP-T10, either using the supplied power adapter or using PoE from an Ethernet switch. If not already done, connect the 67IP-T10 to an Ethernet switch which is capable of routing IP packets to the SLG (see **Figure 1**). When the telephone has completes the boot sequence, press the **Mute** key, the 67IP-T10 IP address (either statically configured or assigned by a DHCP server) will be spoken via the 67IP-T10 loudspeaker (in English).

Launch the web browser and set the URL to http://<67IP-T10 IP address**>.** Click the **Go** button and the 67IP-T10 will return with a logon page. The default user name is **admin**; the default password is **admin**. Directly after log in, the basic status page is presented (see next screenshot).

Figure 10: 67IP-T10 basic status page.

If a DHCP server is operational, the 67IP-T10 will automatically request and receive an IP address, Subnet Mask and Gateway values; and possibly other options (depending on the DHCP server capabilities and configuration). If it is required, the 67IP-T10's IP settings can be configured manually by selecting the **Wizard** tab, then selecting options and populating desired values in the dialog boxes. The following screenshots illustrate the settings used in the test lab. First select **Static IP Mode** and then click on **NEXT**.

Figure 11: 67IP-T10 WIZARD Network Mode Select page.

Although not directly required for 67IP-T10 operation, a DNS server is normally configured for correct CS 1000E function and the IP address and domain names for the various system elements will have been populated. The 67IP-T10 uses IP addresses for registration. Click **NEXT** to move to the **Static IP Set** page.

Figure 12: 67IP-T10 WIZARD Static IP Set page.

For this test configuration, the following values were used on the **Static IP Set** page :

Parameter	Value	Description/Information
Static IP address	47.166.92.197	Telephone set IP address
Netmask	255.255.255.192	Subnet Mask for the LAN segment
Gateway	47.166.92.190	Gateway IP address for routing calls
DNS Domain	galctlab.com	Lan domain, not the SIP domain
Primary DNS	47.166.92.2	Primary DNS to resolve system names
Alter DNS	47.166.113.37	Secondary DNS is not mandatory

Click on **NEXT** to bring up the next screen (**Simple SIP set**).

BASIC

| STATUS | WIZARD | CALL LOG | MMI SET |

Simple SIP Set

Display Name	Bittel Set1
Server Address	47.166.92.201
Server Port	5070
User Name	4052
Password	••••
Phone Number	4052
Enable Register	☑

BACK   NEXT

Figure 13: 67IP-T10 WIZARD Simple SIP Set page.

The following values were used on the **Simple SIP Set** page:

Parameter	Value	Description/Information
Display Name	Bittel Set1	User name, as set in figure 12
Server Address	47.166.92.201	Node IP address of server running SIP Line service
Server Port	5070	Must be port 5070 for SIP Line service
User Name	4052	SIP User Name, as in figure 10
Password	4052	Station control Password, as in figure 11
Phone Number	4052	Directory number, as set in figure 12
Enable Register	Checked	Set must register for SIP Line services

Populate the fields with the values and then click on **NEXT**. A summary table with the important WAN and SIP values is presented (see below), click on **Finish** to make the changes permanent. There will be a short delay while the 67IP-T10 is reconfigured and the web session will end.

Figure 14: 67IP-T10 WIZARD Summary table.

The 67IP-T10 basic status page (see **Figure 10**) contains a menu sidebar with dedicated sections for all important telephone configuration screens. The **Network**, **VOIP** and **PHONE** sections can be used by advanced users to directly configure the 67IP-T10 without making use of the **WIZARD** and some advanced SIP configuration options are only available in these pages.

The 67IP-T10 **Phone** page (below) is primarily used to select the preferred codec list. Note that while CS 1000E does not support G.726 or G.722, the SDP transparency feature will ensure the complete codec list is conveyed to the far end during call setup.

Figure 15: 67IP-T10 Phone page.

67IP-T10 Codec's were chosen to match the CS1000E codec configuration (see **Figure 2**) by selecting the required values from the **First** through **Sixth Codec** drop down lists on the **DSP Configuration** page. The following values were used for the remaining parameters:

Parameter	Value		Parameter	Value
Hand down	200 mS		Default ring type	Type 1
Input Volume	3		Output Volume	9
Handsfree Volume	9		Ring Volume	5
G.729 Payload length	20 mS		Signal standard	United Kingdom
G.722 Timestamps	160/200 mS		G.723 Bit Rate	6.3 kb/S
VAD	unchecked		DTMF Payload Type	101

Figure 16: 67IP-T10 VOIP page.

The previous screenshot shows the 67IP-T10 **VOIP** page (accessible from the basic status page - **Figure 10**). Note, **IAX2**, **STUN** or **Dial Peer** settings were left at default values as these are not required for CS 1000E operation. The following values were used initially; alterations to these values will be highlighted in the particular test case where they occur. **SIP Line Select → Basic Line Settings.**

Parameter	Value		Parameter	Value
Server Name	Cores2		Domain Realm	dpp.nortel
Proxy values	All unset			

Remaining settings are propagated from Basic setup (**Figure 17**). Click on the **Apply** button to save these settings. **SIP Line Select → Advanced Line Settings.** Click on the **Advanced Set** button to bring up the advance settings page.

Parameter	Value		Parameter	Value
Register Expire Time	32		Forward Type	Off
NAT Keep Alive	60		Server Type	Nortel
DTMF Mode	DTMF_RFC2833		RFC Protocol Edition	RFC3261
Transport Protocol	UDP		RFC Privacy Edition	None
Subscribe Expire Time	300			

Click on the **Apply** button to save the settings.

Note: Only one SIP line was tested, settings are independent for each SIP line. 67IP-T10 operation using Network Address Translation was not tested. Unset checkboxes were not enabled during the testing.

7. Verification Steps

To confirm successful configuration and registration of the 67IP-T10 telephone with the CS 1000E SIP Line proxy either of the following two actions is sufficient.

- Use a web browser to access the 67IP-T10. On successful log in, the Basic information page returned will indicate the telephone registration status and the IP address of the SIP Line proxy server. See **Figure 10** for an example.
- Log in to the CS 1000E SIP Line proxy server using the administration terminal. Issue the command **slgSetShowAll**; examine the results to ensure the phone is registered. Use the **slgSetShowbyUID** command for detailed information.

```
[nortel@cores2 ~]$ slgSetShowAll

=== VTRK ===
UserID           TN               Clients  Calls  SetHandle
--------------   --------------   -------  -----  ---------
         4053    096-00-00-30          1      0   0x9e69120
         4052    096-00-00-24          1      0   0x9e64a60


Total User Registered = 2

[nortel@cores2 ~]$ slgSetShowByUID 4053

=== VTRK ===
UserID           TN               Clients  Calls  SetHandle
--------------   --------------   -------  -----  ---------
         4053    096-00-00-30          1      0   0x9e69120
       StatusFlags = Registered Controlled KeyMapDwld SSD
       FeatureMask =
       CallProcStatus = -1

       Current Client = 0, Total Clients = 1

        == Client 0 ==
        IP:Port:Trans = 47.166.92.186:5060:udp
        Type          = SIP3
        UserAgent     = Voip Phone 1.0
        x-nt-guid     = 00094554f12c
        RegDescrip    =
        RegStatus     = 1
        PbxReason     = OK
        SipCode       = 200
        Expire        = 32
        Contact       = sip:4053@47.166.92.186:5060
```

Figure 17: 67IP-T10 registration details.

8. Conclusion

The Bittel 67IP-T10 is a low cost basic SIP phone intended primarily for the hospitality industry. It lacks an alphanumeric display, but provides a web interface for phone programming. There is a built in Ethernet switch (with optional DHCP services) to provide network access for PC's, phone and PC share the same network, reducing costs.

When configured on a Avaya Communication Server 1000E, it provides similar services and features to an analog telephone, but uses SIP protocol over IP and thus operates over an Ethernet network rather than requiring point-to-point wiring,. In operation, it has most of the features required to support day to day business activities. The ten user definable keys could be used to program DTMF sequences to activate/deactivate features such as 'Call Forward Unconditional, 'Call Pickup'. The 67IP-T10's Message Waiting Indicator is compatible with Avaya™ Modular Messaging installations.

9. References

The following documents and external references may be helpful in understanding operation of particular CS1000 features and may provide more detailed information on international SIP standards.

[1] A descriptive document on SIP services offered on user agents or PBX's. Session Initiation Protocol Service Examples - draft-ietf-sipping-service-examples-12, SIPPING Working Group, Internet-Draft, 7/24/2007, available at http://tools.ietf.org/wg/sipping/draft-ietf-sipping-service-examples/draft-ietf-sipping-service-examples-13.txt.

[2] Information on how to install and configure Linux and Telephony applications:- Avaya Communication Server 1000E – Documentation Library – Document NN43001-315 (*Linux Platform Base and Applications Installation and Commissioning*)

[3] The necessary procedures and guidelines bring a CS1000E system online:- Avaya Communication Server 1000E – Documentation Library – Document NN43041-310 *(Communication Server 1000E Installation and Commissioning)*.

[4] System Management platform (UCM) provides security, software deployment and other services to CS1000E elements: Avay*a Communication Server 1000E – Documentation Library – Docum*ent NN43001-116 *(Unified Communications Management Common Services Fundamentals)*.

[5] For information on configuring and operating SIP Line services on the CS1000E, see the following document:- Avaya Communication Server 1000E – Documentation Library – Document NN43001-508 (*Configuration SIP Line Fundamentals)*.

[6] A complete and detailed account of all CS1000E telephony features and services can be found in the following document : Avaya Communication Server 1000E – Documentation Library – Document NN43001-106-B1 through NN43001-106-B6 (*Communication Server 1000 Features and Services Fundamentals - Book 1 through Book 6)*.

[7] The installation and operating instructions for Bittel 67IP-T10 telephone can be found in the following document: BT-2008 (67-T-A) SIP Phone User Guide.

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10. Appendix

10.1. Linux Base software and installed Applications

```
Product Release: 6.00.18.00
Base Applications
   base                      6.00.18
   NTAFS                     6.00.18
   sm                        6.00.18
   Jboss-Quantum             6.00.18
   lhmonitor                 6.00.18
   kcv                       6.00.18
   dfoTools                  6.00.18
   cppmUtil                  6.00.18
   oam-logging               6.00.18
   dmWeb                     6.00.18.62
   baseWeb                   6.00.18
   ipsec                     6.00.18
   Snmp-Daemon-TrapLib       6.00.18
   tap                       6.00.18
   EmCentralLogic            6.00.18
Application configuration: CS+SS+NRS+EM
Packages:
CS+SS+NRS+EM
Configuration version:     6.00.18
 cs                        6.00.R
   dbcom                     6.00.18.65
   cslogin                   6.00.18
   sigServerShare            6.00.18.62
   csv                       6.00.18.65
   tps                       6.00.18.65
   vtrk                      6.00.18.65
   pd                        6.00.18.62
   sps                       6.00.18.63
   ncs                       6.00.18
   gk                        6.00.18.65
   nrsm                      6.00.18
   nrsmWebService            6.00.18
   managedElementWebService  6.00.18
   emWeb_6-0                 6.00.18
   csmWeb                    6.00.18
   bcc_6-0                   6.00.18
   ftrpkg                    6.00.18
   cs1000WebService_6-0      6.00.18
```

10.2. Installed Linux Base and Application Patches and Service Updates

```
Product Release: 6.00.18.00
In system patches: 4
PATCH#   NAME         RPM
2        p29703_1     nortel-cs1000-shared-ssSubagent-6.00.18-00.i386
3        p29407_1     nortel-cs1000-cs-6.00.R.100-00.i386
15       p28774_1     nortel-cs1000-Jboss-Quantum-6.00.18.00-00.i386
16       p28797_1     nortel-cs1000-Jboss-Quantum-6.00.18.00-00.i386

In System service updates: 21
PATCH#   NAME
0        ntp-4.2.4p8-1.el5.pp.i386.000
1        nortel-cs1000-csv-6.00.18.65-04.i386.000
4        nortel-cs1000-linuxbase-6.00.18.65-03.i386.001
5        nortel-cs1000-patchWeb-6.00.18.65-01.i386.001
7        nortel-cs1000-bcc_6-0-6.00.18.65-02.i386.000
9        nortel-cs1000-cs1000WebService_6-0-6.00.18.65-02.i386.
10       nortel-cs1000-ftrpkg-6.00.18.65-02.i386.000
12       nortel-cs1000-sps-6.00.18.63-00.i386.000
13       nortel-cs1000-gk-6.00.18.65-01.i386.000
14       nortel-cs1000-tps-6.00.18.65-19.i386.000
17       nortel-cs1000-vtrk-6.00.18.65-76.i386.000
22       nortel-cs1000-shared-general-6.00.18.62-00.i386.000
23       nortel-cs1000-shared-pbx-6.00.18.62-00.i386.000
24       nortel-cs1000-emWeb_6-0-06.00.18.63-01.i386.001
25       nortel-cs1000-pd-6.00.18.62-00.i386.000
26       nortel-cs1000-nrsm-6.00.18.62-00.i386.000
28       nortel-cs1000-dmWeb-6.00.18.62-00.i386.001
30       nortel-cs1000-csmWeb-6.00.18.62-00.i386.001
31       nortel-cs1000-auth-6.00.18.62-00.i386.000
32       nortel-cs1000-ISECSH-6.00.18.62-00.i386.000
34       nortel-cs1000-dbcom-6.00.18.65-01.i386.001


The following SP is in service: Service_Pack_Linux_6.00_18_20110104.ntl
```

10.3. **Installed call server dependency lists**

```
VERSION 4121
RELEASE 6
ISSUE 00 R +
DepList 1: core Issue: 02 (created: 2011-01-10 09:38:29 (est))

IN-SERVICE PEPS
PAT# CR #            PATCH REF #      NAME      DATE        FILENAME
SPECINS
000  Q02033000       ISS1:1of1        p28736_1  04/02/2011  p28736_1.cpl
001  Q02071451       ISS1:1OF1        p29164_1  04/02/2011  p29164_1.cpl
002  Q02129706       ISS1:1OF1        p29842_1  04/02/2011  p29842_1.cpl
003  wi00826342      ISS2:1OF1        p30471_2  04/02/2011  p30471_2.cpl
004  Q02093188       ISS1:1OF1        p29352_1  04/02/2011  p29352_1.cpl
005  Q02097405       ISS1:1OF1        p24463_1  04/02/2011  p24463_1.cpl
006  Q01987279-02    ISS1:1OF1        p28416_1  04/02/2011  p28416_1.cpl
007  Q02076740       ISS1:1OF1        p29154_1  04/02/2011  p29154_1.cpl
008  Q02029209       ISS1:1OF1        p28469_1  04/02/2011  p28469_1.cpl
009  Q02024455-01    ISS1:1OF1        p28717_1  04/02/2011  p28717_1.cpl
010  Q01983521-04    ISS1:1OF1        p27616_1  04/02/2011  p27616_1.cpl
011  Q02035822-01    ISS1:1OF1        p29212_1  04/02/2011  p29212_1.cpl
012  Q01986974-05    ISS1:1OF1        p28821_1  04/02/2011  p28821_1.cpl
013  Q02049121-01    ISS1:1OF1        p28819_1  04/02/2011  p28819_1.cpl
014  Q02097631       ISS1:1OF1        p28328_1  04/02/2011  p28328_1.cpl
015  Q02064793-06    ISS1:1OF1        p27947_1  04/02/2011  p27947_1.cpl
016  Q01976701-01    ISS1:1OF1        p28211_1  04/02/2011  p28211_1.cpl
017  Q02092223       ISS1:1OF1        p29343_1  04/02/2011  p29343_1.cpl
018  Q02043398       ISS1:1OF1        p28869_1  04/02/2011  p28869_1.cpl
019  Q02038440       ISS1:1OF1        p28674_1  04/02/2011  p28674_1.cpl
020  Q02100965       ISS1:1OF1        p29450_1  04/02/2011  p29450_1.cpl
021  Q02040015       ISS1:1OF1        p28657_1  04/02/2011  p28657_1.cpl
022  Q02102219-01    ISS1:1OF1        p29464_1  04/02/2011  p29464_1.cpl
023  Q02035396       ISS1:1OF1        p28675_1  04/02/2011  p28675_1.cpl
024  Q02020734-02    ISS1:1OF1        p28668_1  04/02/2011  p28668_1.cpl
025  Q02077909       ISS1:1of1        p29272_1  04/02/2011  p29272_1.cpl
026  Q02064503       ISS1:1OF1        p29196_1  04/02/2011  p29196_1.cpl
027  Q02041981       p28695_1         p28719_1  04/02/2011  p28719_1.cpl
028  Q02122052       ISS1:1OF1        p29726_1  04/02/2011  p29726_1.cpl
029  Q02135191       ISS1:1OF1        p29935_1  04/02/2011  p29935_1.cpl
030  Q02041702       ISS1:1OF1        p28698_1  04/02/2011  p28698_1.cpl
031  Q02041385-02    ISS1:1OF1        p29032_1  04/02/2011  p29032_1.cpl
032  Q02086333       ISS1:1OF1        p29262_1  04/02/2011  p29262_1.cpl
033  Q02077848-01    ISS1:1OF1        p29320_1  04/02/2011  p29320_1.cpl
034  Q02034783-01    p28596           p28594_1  04/02/2011  p28594_1.cpl
035  Q02156053       ISS1:1OF1        p30176_1  04/02/2011  p30176_1.cpl
036  Q02007476       ISS1:1OF1        p28031_1  04/02/2011  p28031_1.cpl
037  Q02134312-01    ISS1:1OF1        p30123_1  04/02/2011  p30123_1.cpl
038  Q02017013-01    ISS1:1OF1        p28313_1  04/02/2011  p28313_1.cpl
039  Q02114752       ISS1:1OF1        p29718_1  04/02/2011  p29718_1.cpl
040  Q02110973       ISS1:1OF1        p29690_1  04/02/2011  p29690_1.cpl
041  Q02107402       ISS1:1of1        p29512_1  04/02/2011  p29512_1.cpl
042  Q02100914       ISS1:1OF1        p28597_1  04/02/2011  p28597_1.cpl
043  Q02036885-02    ISS1:1OF1        p28857_1  04/02/2011  p28857_1.cpl
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044   Q02096711      ISS1:1OF1      p29714_1   04/02/2011   p29714_1.cpl
045   Q02079849      ISS1:1OF1      p29238_1   04/02/2011   p29238_1.cpl
046   Q02024135-04   ISS1:1OF1      p28381_1   04/02/2011   p28381_1.cpl
047   Q01782930-01   ISS1:1OF1      p24964_1   04/02/2011   p24964_1.cpl
048   Q02031323-01   ISS1:1of1      p28546_1   04/02/2011   p28546_1.cpl
049   Q02100456-01   ISS1:1 OF 1    p29755_1   04/02/2011   p29755_1.cpl
050   Q02033139      ISS1:1OF1      p28582_1   04/02/2011   p28582_1.cpl
051   Q02032955-02   ISS1:1OF1      p28529_1   04/02/2011   p28529_1.cpl
052   Q02043226-02   ISS1:1OF1      p29125_1   04/02/2011   p29125_1.cpl
053   Q02039427-02   ISS1:1OF1      p28849_1   04/02/2011   p28849_1.cpl
054   Q02095838      1SS1:1OF1      p28852_1   04/02/2011   p28852_1.cpl
055   Q02119261      ISS2:1OF1      p29613_2   04/02/2011   p29613_2.cpl
056   Q02058567-01   ISS1:1OF1      p28965_1   04/02/2011   p28965_1.cpl
057   Q02027777      ISS1:1OF1      p28471_1   04/02/2011   p28471_1.cpl
058   Q02034835      ISS1:1OF1      p28569_1   04/02/2011   p28569_1.cpl
059   Q02038482      ISS1:1OF1      p28682_1   04/02/2011   p28682_1.cpl
060   Q02077171      ISS1:1OF1      p29169_1   04/02/2011   p29169_1.cpl
061   Q02028560-04   ISS1:1OF1      p28564_1   04/02/2011   p28564_1.cpl
062   Q02039217-01   ISS1:1OF1      p28760_1   04/02/2011   p28760_1.cpl
063   Q02129264      ISS1:1OF1      p29827_1   04/02/2011   p29827_1.cpl
064   Q02022264      ISS1:1OF1      p28486_1   04/02/2011   p28486_1.cpl
065   Q02097948      ISS1:1OF1      p29443_1   04/02/2011   p29443_1.cpl
066   Q01938235-05   ISS2:1OF1      p28418_2   04/02/2011   p28418_2.cpl
067   Q02031502      ISS1:1OF1      p28832_1   04/02/2011   p28832_1.cpl
068   Q02109161      ISS1:1OF1      p29536_1   04/02/2011   p29536_1.cpl
069   Q02159328-01   ISS1:1OF1      p30223_1   04/02/2011   p30223_1.cpl
070   Q02007976-03   ISS1:1OF1      p28028_1   04/02/2011   p28028_1.cpl
071   Q02019323      ISS1:1OF1      p28551_1   04/02/2011   p28551_1.cpl
072   Q02048680      ISS1:1OF1      p28983_1   04/02/2011   p28983_1.cpl
073   Q02043669      ISS1:1OF1      p28771_1   04/02/2011   p28771_1.cpl
074   Q02092594      ISS1:1OF1      p27830_1   04/02/2011   p27830_1.cpl
075   Q02065521      ISS1:1OF1      p29218_1   04/02/2011   p29218_1.cpl
076   Q02011613-01   ISS1:1OF1      p28108_1   04/02/2011   p28108_1.cpl
077   Q02024749-02   ISS1:1OF1      p29680_1   04/02/2011   p29680_1.cpl
078   Q02033951      ISS1:1OF1      p28579_1   04/02/2011   p28579_1.cpl
079   Q02093256-03   ISS1:1OF1      p29354_1   04/02/2011   p29354_1.cpl
080   Q02031118      ISS1:1OF1      p28680_1   04/02/2011   p28680_1.cpl
081   Q02083027      ISS1:1OF1      p29233_1   04/02/2011   p29233_1.cpl
082   Q02031359      p28679         p28725_1   04/02/2011   p28725_1.cpl
083   Q00349046-03   ISS1:1OF1      p17588_1   04/02/2011   p17588_1.cpl
084   Q02031959      ISS1:1OF1      p28728_1   04/02/2011   p28728_1.cpl
085   Q02058296-04   ISS1:1OF1      p28956_1   04/02/2011   p28956_1.cpl
086   Q02020526      ISS1:1OF1      p28537_1   04/02/2011   p28537_1.cpl
087   Q02029228-01   ISS1:1OF1      p28681_1   04/02/2011   p28681_1.cpl
088   Q02124953      ISS1:1OF1      p29744_1   04/02/2011   p29744_1.cpl
089   Q02038675      ISS1:1OF1      p28665_1   04/02/2011   p28665_1.cpl
090   Q02084339-02   ISS1:1OF1      p29137_1   04/02/2011   p29137_1.cpl
091   Q02055997      ISS1:1OF1      p28895_1   04/02/2011   p28895_1.cpl
092   Q02043231      ISS1:1OF1      p28712_1   04/02/2011   p28712_1.cpl
093   Q02021470-02   ISS1:1OF1      p28776_1   04/02/2011   p28776_1.cpl
094   Q02035555      ISS1:1OF1      p28814_1   04/02/2011   p28814_1.cpl
095   Q02105638-01   1SS1:1OF1      p29675_1   04/02/2011   p29675_1.cpl
096   Q02044341      ISS1:1OF1      p28957_1   04/02/2011   p28957_1.cpl
097   Q02172404      ISS1:1OF1      p30357_1   04/02/2011   p30357_1.cpl
098   Q02073690      ISS1:1OF1      p29208_1   04/02/2011   p29208_1.cpl
099   Q02096318      ISS1:1of1      p29423_1   04/02/2011   p29423_1.cpl
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100   Q02030977      ISS1:1OF1       p28507_1   04/02/2011   p28507_1.cpl
101   Q01999478-01   ISS1:1OF1       p27897_1   04/02/2011   p27897_1.cpl
102   Q02108852      ISS1:1OF1       p29825_1   04/02/2011   p29825_1.cpl
103   Q02103928      ISS1:1OF1       p29486_1   04/02/2011   p29486_1.cpl
104   Q02021384-01   ISS1:1OF1       p28615_1   04/02/2011   p28615_1.cpl
105   Q02124220      ISS1:1OF1       p29943_1   04/02/2011   p29943_1.cpl
106   Q02137476      ISS1:1OF1       p29962_1   04/02/2011   p29962_1.cpl
107   Q02094012      ISS1:1OF1       p29370_1   04/02/2011   p29370_1.cpl
108   Q01884473-01   ISS1:1OF1       p26726_1   04/02/2011   p26726_1.cpl
109   Q02006644-03   ISS1:1OF1       p30135_1   04/02/2011   p30135_1.cpl
110   Q02011541-03   ISS1:1OF1       p29998_1   04/02/2011   p29998_1.cpl
111   Q02164720      ISS1:1OF1       p30282_1   04/02/2011   p30282_1.cpl
112   Q02077977-01   ISS1:1OF1       p29177_1   04/02/2011   p29177_1.cpl
113   Q02109731-02   ISS1:1OF1       p29694_1   04/02/2011   p29694_1.cpl
114   Q02071739      ISS1:1OF1       p29096_1   04/02/2011   p29096_1.cpl
115   Q02058669-01   ISS1:1OF1       p30124_1   04/02/2011   p30124_1.cpl
116   wi00820216     Iss1:1of1       p30447_1   04/02/2011   p30447_1.cpl
117   Q02088715-02   ISS3:1OF1       p29077_3   04/02/2011   p29077_3.cpl
118   Q02140914-02   ISS1:1OF1       p30004_1   04/02/2011   p30004_1.cpl
119   Q01982233-06   ISS1:1OF1       p28172_1   04/02/2011   p28172_1.cpl
120   Q02057782-01   ISS1:1OF1       p29215_1   04/02/2011   p29215_1.cpl
121   Q01974578-04   ISS1:1OF1       p27329_1   04/02/2011   p27329_1.cpl
122   Q02052184-01   ISS1:1OF1       p30288_1   04/02/2011   p30288_1.cpl
123   Q02150271      ISS1:1OF1       p30104_1   04/02/2011   p30104_1.cpl
124   Q02151971      ISS1:1OF1       p30156_1   04/02/2011   p30156_1.cpl
125   Q02111317      ISS1:1OF1       p29844_1   04/02/2011   p29844_1.cpl
126   Q02121311      ISS1:1OF1       p29728_1   04/02/2011   p29728_1.cpl
127   Q02149096      ISS1:1OF1       p30090_1   04/02/2011   p30090_1.cpl
128   Q02007724-04   ISS1:1OF1       p29681_1   04/02/2011   p29681_1.cpl
129   Q02040038-03   ISS1:1OF1       p28647_1   04/02/2011   p28647_1.cpl
130   Q02158724      ISS1:1OF1       p30210_1   04/02/2011   p30210_1.cpl
131   Q02103392-01   ISS1:1OF1       p29480_1   04/02/2011   p29480_1.cpl
132   Q02061039-04   ISS1:1OF1       p28927_1   04/02/2011   p28927_1.cpl
133   Q02039403-01   ISS1:1OF1       p29378_1   04/02/2011   p29378_1.cpl
134   Q02108821-01   ISS1:1OF1       p29529_1   04/02/2011   p29529_1.cpl
135   Q02109705-04   ISS1:1OF1       p29701_1   04/02/2011   p29701_1.cpl
136   Q02131549      ISS1:1OF1       p30065_1   04/02/2011   p30065_1.cpl
137   Q02066737-05   ISS1:1OF1       p29537_1   04/02/2011   p29537_1.cpl
138   Q01925518-06   ISS2:1OF1       p29491_2   04/02/2011   p29491_2.cpl
139   Q02077764-04   ISS1:1OF1       p29174_1   04/02/2011   p29174_1.cpl
140   wi00733835     ISS1:1OF1       p30418_1   04/02/2011   p30418_1.cpl
141   Q02125731      ISS1:1OF1       p29802_1   04/02/2011   p29802_1.cpl
142   Q01873266-02   ISS1:1OF1       p25747_1   04/02/2011   p25747_1.cpl
143   Q02110455-03   ISS1:1OF1       p29670_1   04/02/2011   p29670_1.cpl
144   Q00350041-01   ISS1:1OF1       p16376_1   04/02/2011   p16376_1.cpl
145   Q02095619-04   ISS2:1OF1       p29376_2   04/02/2011   p29376_2.cpl
146   Q02113482      ISS1:1OF1       p30294_1   04/02/2011   p30294_1.cpl
147   Q02071694-04   ISS1:1OF1       p29679_1   04/02/2011   p29679_1.cpl
148   Q01974383-02   ISS1:1OF1       p27378_1   04/02/2011   p27378_1.cpl
149   Q02104745-01   ISS1:1OF1       p29495_1   04/02/2011   p29495_1.cpl
150   Q02124023-03   ISS1:1OF1       p29903_1   04/02/2011   p29903_1.cpl
151   Q02157668      ISS1:1OF1       p30204_1   04/02/2011   p30204_1.cpl
152   Q02110441-01   ISS1:1OF1       p29577_1   04/02/2011   p29577_1.cpl
153   Q02144165      ISS1:1OF1       p30036_1   04/02/2011   p30036_1.cpl
154   Q02112375-02   ISS1:1OF1       p29671_1   04/02/2011   p29671_1.cpl
155   Q02019660-04   ISS2:1OF1       p28252_2   04/02/2011   p28252_2.cpl
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156  Q02108873-02    ISS1:1OF1        p29590_1  04/02/2011  p29590_1.cpl
157  wi00734106      ISS1:1OF1        p30421_1  04/02/2011  p30421_1.cpl
158  Q02170814       ISS1:1OF1        p30345_1  04/02/2011  p30345_1.cpl
159  Q02157937       ISS1:1OF1        p30218_1  04/02/2011  p30218_1.cpl
160  wi00830941      ISS1:1OF1        p30461_1  04/02/2011  p30461_1.cpl
161  Q02120030       ISS1:1OF1        p29713_1  04/02/2011  p29713_1.cpl
162  wi00732114      ISS1:1OF1        p30398_1  04/02/2011  p30398_1.cpl
163  wi00730573      p29355           p30416_1  04/02/2011  p30416_1.cpl
164  Q02155346-01    ISS3:1OF1        p30074_1  04/02/2011  p30074_1.cpl
165  wi00833809      ISS1:1OF1        p30540_1  04/02/2011  p30540_1.cpl
166  wi00795545      ISS1:1OF1        p30336_1  04/02/2011  p30336_1.cpl
167  Q02168320       ISS1:1OF1        p30346_1  04/02/2011  p30346_1.cpl
168  Q02122642       ISS1:1OF1        p29732_1  04/02/2011  p29732_1.cpl
169  Q01994258-03    ISS1:1OF1        p30303_1  04/02/2011  p30303_1.cpl
170  wi00835128      ISS1:1OF1        p30554_1  04/02/2011  p30554_1.cpl
171  Q02079612-02    ISS1:1OF1        p29191_1  04/02/2011  p29191_1.cpl
172  Q02157822-01    ISS1:1OF1        p30197_1  04/02/2011  p30197_1.cpl
173  Q02116276-01    ISS1:1OF1        p29723_1  04/02/2011  p29723_1.cpl
174  wi00826065      ISS1:1OF1        p30452_1  04/02/2011  p30452_1.cpl
175  Q02155698       ISS1:1OF1        p30172_1  04/02/2011  p30172_1.cpl
176  Q02167838       p29830           p30324_1  04/02/2011  p30324_1.cpl
177  wi00821858      ISS1:1OF1        p30243_1  04/02/2011  p30243_1.cpl
178  Q02136557       ISS2:1OF1        p29899_2  04/02/2011  p29899_2.cpl
179  WI00824134      ISS1:1OF1        p30456_1  04/02/2011  p30456_1.cpl
180  Q02062971       ISS1:1OF1        p29028_1  04/02/2011  p29028_1.cpl
181  wi00834380      ISS1:1OF1        p30548_1  04/02/2011  p30548_1.cpl
182  wi00819538      p30085           p30527_1  04/02/2011  p30527_1.cpl
MDP>LAST SUCCESSFUL MDP REFRESH :2011-01-10 17:38:55(Local Time)
MDP>USING DEPLIST ZIP FILE DOWNLOADED :2011-01-10 09:38:29(est)
```

10.4. **Installed call server patches and plug-ins**

```
14/02/11 13:58:36
TID: 46379


VERSION 4121


System type is - Communication Server 1000E/CPPM Linux
CPPM - Pentium M 1.4 GHz

IPMGs Registered:              1
IPMGs Unregistered:            0
IPMGs Configured/unregistered:  0

RELEASE 6
ISSUE 00 R  +
IDLE_SET_DISPLAY Rls6 CoRes2
DepList 1: core Issue: 02(created: 2011-01-10 09:38:29 (est))

MDP>LAST SUCCESSFUL MDP REFRESH :2011-01-10 17:38:55(Local Time)
MDP>USING DEPLIST ZIP FILE DOWNLOADED :2011-01-10 09:38:29(est)
SYSTEM HAS NO USER SELECTED PEPS IN-SERVICE


LOADWARE VERSION: PSWV 100

INSTALLED LOADWARE PEPS : 0

ENABLED PLUGINS : 1

PLUGIN    STATUS     PRS/CR_NUM    MPLR_NUM      DESCRIPTION
-------------------------------------------------------------
206       ENABLED    Q00954846     MPLR19491     PI:Connected party number
inserted at the tandem node
```