



Configuring Spectrum V-Display and Avaya Call Management System – Issue 1.0

Abstract

These Application Notes describe the compliance test configuration of the Spectrum Corporation V-Display application with the Avaya™ Call Management System (CMS) and the Avaya™ S8700 Media Server/Avaya™ G600 Media Gateway (IP Connect). The V-Display Application software resides within CMS and collects data to be displayed on the Spectrum Wallboard. The objective for this test was to evaluate the compliance of V-Display with the Avaya CMS. Information in these notes has been obtained through compliance testing and additional technical discussions. Testing was conducted via the DeveloperConnection Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

These Application Notes describe the configuration steps required for wallboard display of CMS monitored call data over an IP network using the Spectrum V-Display software application. V-Display is a software program developed by Spectrum Corporation. V-Display resides on the CMS server and collects data (see item 1 below for details) to be displayed on Spectrum Wallboards. The application has a Microsoft Windows Graphical User Interface (GUI) that provides the customer the ability to administer the software from any PC that is running the V-Display client and is connected to CMS. The V-Display software collects interval (real-time) and historical data from CMS and the customer selects from the V-Display the data items for a display on the Spectrum Wallboards.

There are three major sections to the V-Display software: two are primary and secondary daemons and the third is a Windows client designed for administration of the V-Display output and configurations. Listed below are the descriptions of the V-Display software sections.

1. The V-Display Daemon, which resides on the CMS server, collects the data and displays the data on the wallboard.

This primary daemon uses the CMS client interface to read two CMS custom reports: one real-time report and one historical report. Both reports are included with the V-Display software. From the data gathered in the report, the V-Display daemon then creates a set of 59 displayable Data Items. For a complete list of data items, see the Spectrum V-Display User Manual. An on-line version of this manual can be found on the V-Display client by choosing **User Manual** from the **Help** menu item. The data items are transmitted to the wallboard via one of two methods. One method is through a serial connection. This is a simple RS232 stream of hex characters. The other method is through a standard TCP/IP socket sending the hex characters.

2. The V-Display GUI Daemon, which also resides on the CMS server, communicates with the V-Display daemon and listens to the V-Display GUI Interface.

The secondary daemon is a TCP/IP socket listener that will respond and handle requests that are sent from the V-Display GUI Interface (client) application. The users are validated with the standard Solaris PAM interface.

3. The V-Display GUI interface (client) is an application that resides on a PC and talks to the V-Display GUI daemon on the CMS.

Spectrum V-Display has the following system requirements:

1. The V-Display Daemon and the V-Display GUI daemon require Avaya CMS Release 6.0 or higher and the Solaris 2.6 or higher for the CMS Server platform. CMS networking configurations support both TCP/IP and Token Ring networking.

2. The V-Display GUI interface requires Windows 95/98, WinNT, WinXP or Win2K. The minimum requirement for V-Display is a PC with an Intel Pentium 350MHz or higher microprocessor, 64MB RAM, 10 MB HD space, CD-ROM Drive, network connection (Ethernet or Token Ring) and a service modem.

The data is transferred between the Windows interface and the UNIX application using a combination of FTP and custom TCP/IP sockets.

Note the following with regards to wallboard compatibility relating to the V-Display software:

1. **Serial Wallboards:** All Spectrum Wallboards manufactured after October 1995 are compatible with the V-Display software. Serial Wallboards can be integrated with the new IP wallboards.
2. **IP Wallboards:** The IP wallboards are fully compatible with the V-Display Software.

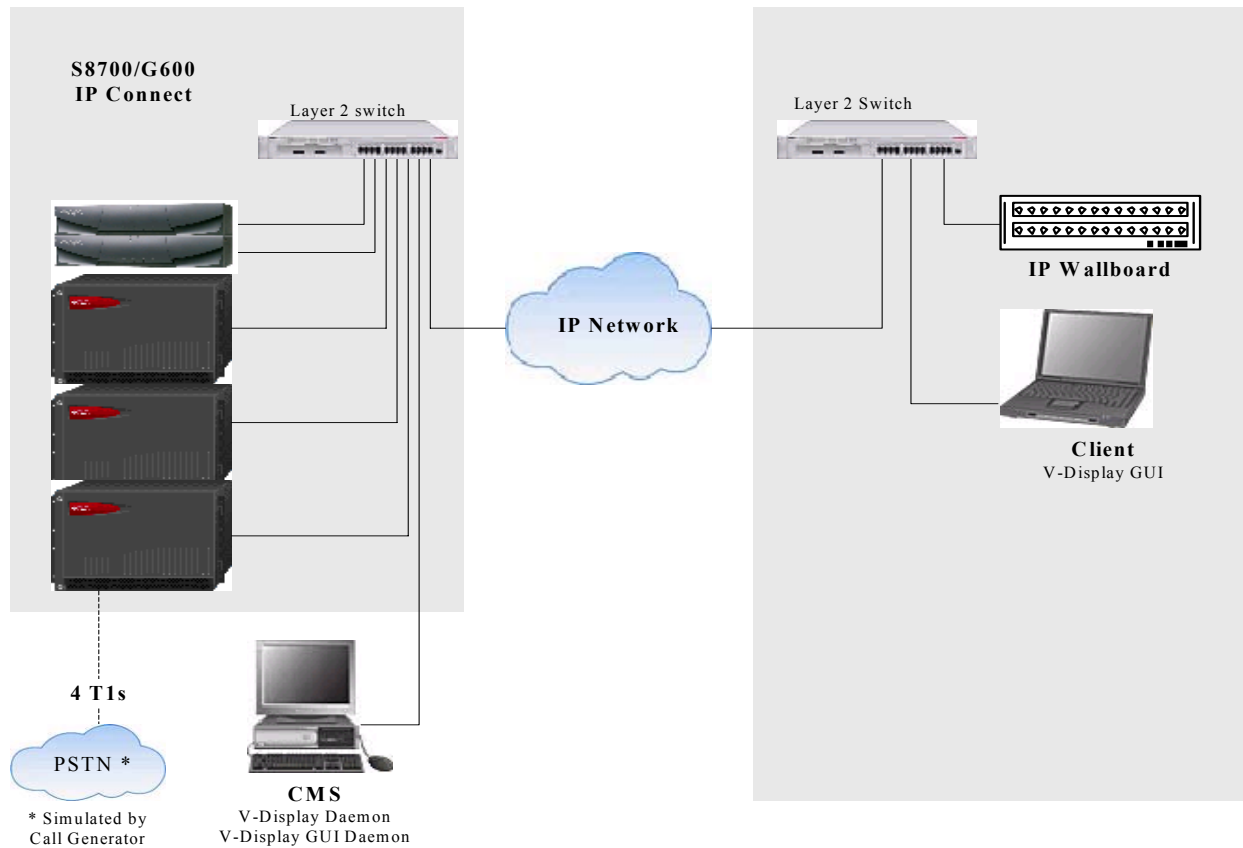


Figure 1: Avaya DeveloperConnection Compliance Test Configuration

2. Equipment and Software Validated

The following equipment and software were compliance tested in the provided sample configuration depicted in **Figure 1**:

Equipment	Software
Avaya™ S8700 Media Server with G600 Media Gateway	MV 1.2
Avaya™ Call Management Server (Sun Ultra5, OS 5.8, Solaris 2.6.x)	R3V11
Spectrum V-Display	V 2.0.11.8
Spectrum V-Display Client	V 1.4.7
Spectrum Wallboard	5340-WB1 1018-4403N

3. Installing V-Display on Avaya CMS

The V-Display application resides in the `/opt/spectrum/vdisplay` directory within the CMS and it is installed via Korn shell scripts that are included on the V-Display CD.

3.1. Loading V-display Driver

1. Login to CMS in terminal mode as **root**
2. Place the V-Display CD into CMS's CD ROM
3. Enter **cd /cdrom/cdrom0**
4. Enter **cd unix** (directory on the CD)
5. Enter **ls** to see everything in the directory or **ls -al** to see everything in long format
6. (This step checks that you can access the CD)
7. Enter **uname -a** to see name of machine (Host Name)
8. Enter **hostid** to see the internal serial number of machine
9. (Will be used for Avaya to create license)
10. Enter **./Install_cd.ksh**
11. Enter the V-Display user password
12. Enter the **hostname**, which creates **.crypt**
13. (This removes the installation script so V-display can't be reloaded and create problems)
14. The software is now installed.

3.2. Installing License file for V-Display

1. Enter **cd /opt/spectrum/vdisplay/etc**
2. Enter the command **echo "VKEY string" > license.dat**
(The *VKEY string* is generated by Spectrum and may look like *HDEFD441DGEGF4121F*. This string could either be entered into the file *license.dat* or entered as above ex. **echo "HDEFD441DGEGF4121F" > license.dat**)
3. Enter **more license.dat** to see if the license is in effect.

Spectrum must create the license. Contact Spectrum Support by email support@specorp.com with the CMS Hostname, Host ID, the CMS version, and the CD serial number. These are all

mandatory to receive a license from Spectrum for V-Display. Failure to provide these items will delay creating the license.

3.3. Loading the GUI Interface on CMS

1. Enter **cd /opt/spectrum/vdisplay/gui**
2. Enter **echo "port number" > .port**
The port number is changed only if the customer requests not to use the default of 4444. In that case, customer would echo the new port number in the *.port* file. For example, if a customer wanted to use the port 5678 instead of the default 4444 they could enter the following command: **echo "5678" > .port**
3. Enter **more .port** to see the new port number
4. Enter **./restart gServerd.ksh**
This action starts the program and must be done manually unless the machine is restarted, which will start the program. This action will return the process ID number
5. Enter **ps -ef |grep gServerd** to check if the program is running
6. In the **bin** directory, enter **./mk_vdispFiles.ksh** and enter the permission for each user.
7. The GUI is now installed on the CMS

3.4. Starting V-Display Daemon

After completing the configuration via the Windows GUI, start the daemon. The configuration can be manually changed using the **vi** utility for the *cfg*, *vdu*, *msg*, and *data* files.

1. Enter **cd /opt/spectrum/vdisplay/bin**
2. Enter **./cyclevd.ksh** to start a script. That action starts or stops the Vdisplay daemon.

4. Configuring V-Display GUI Client

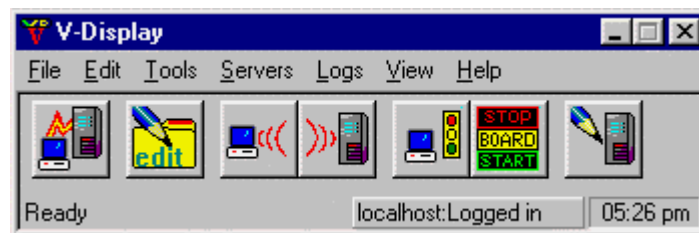


Figure 2: V-Display Client

Complete documentation for the V-Display GUI Client is included on the installation CD. For a list of V-Display GUI configuration steps, see the Spectrum User Manual. In addition, an on-line version of this manual can be found on the V-Display GUI by choosing User Manual from the Help menu items. Follow directions for creating a New Server, then using the Configurator to configure the wallboard, set up the data that is being sent and create messages to be run on the wallboard.

5. Configuring Avaya CMS and PBX for V-Display connection

This section describes the Avaya CMS and PBX Admin screens with their relevance to the V-Display configuration options highlighted in bold.

5.1. CMS configurations for V-Display

This CMS configuration establishes a link to the PBX.

```
r3lnjn# cmssvc

Avaya(TM) Call Management System Services Menu

Select a command from the list below.
  1) auth_display Display feature authorizations
  2) auth_set    Authorize capabilities/capacities
  3) run_ids     Turn Informix Database on or off
  4) run_cms    Turn Avaya CMS on or off
  5) disk_space  Format/Assign disk space to Database Server
  6) setup      Set up the initial configuration
  7) swinfo     Display switch information
  8) swsetup    Change switch information
  9) patch_inst Install a single CMS patch from CD
 10) patch_rmv  Backout an installed CMS patch
 11) load_all   Install all CMS patches found on CD
 12) back_all   Backout all installed CMS patches from machine
Enter choice (1-12) or q to quit: 7
```

```
Select an ACD
  1) pbx32_site1
Enter choice (1-1) or q to quit: 1
```

```
Switch administration for acd 1:
  Switch name: pbx32_site1

  Switch model: MultiVantage-R11
  Vectoring: y
  Expert Agent Selection: y
  Central office disconnect supervision: y
  Local port: 1
  Remote port: 1
  Link: TCP/IP clanpbx32-1a03 5001
```

5.2. Avaya MultiVantage configuration for CMS Connection

The following screenshots display the configuration required by MultiVantage for CMS node connection.

```
display system-parameters features                                     Page 11 of 12
                                FEATURE-RELATED SYSTEM PARAMETERS

AGENT AND CALL SELECTION
    MIA Across Splits or Skills? n
    ACW Agents Considered Idle? y
    Call Selection Measurement: current-wait-time
    Service Level Supervisor Call Selection Override? n
    Auto Reserve Agents: none
    Copy ASAI UII During Conference/Transfer? n
REASON CODES
    Aux Work Reason Code Type: none
    Logout Reason Code Type: none
CALL MANAGEMENT SYSTEM

Adjunct CMS Release: R3V11

    BCMS/VuStats LoginIDs? y
    BCMS/VuStats Measurement Interval: hour
    BCMS/VuStats Abandon Call Timer (seconds):
    Validate BCMS/VuStats Login IDs? n
    Clear VuStats Shift Data: on-login
    Remove Inactive BCMS/VuStats Agents? N
```

```
display communication-interface processor-channels                 Page 1 of 24
                                PROCESSOR CHANNEL ASSIGNMENT
Proc      Gtwy      Interface      Destination      Session      Mach
Chan Enable  Appl.   To Mode Link/Chan      Node          Port  Local/Remote ID
1:  y   mis      s   1   5001 cms          0          1   1
2:  n
3:  n
4:  n
```

```
display node-names ip
                                IP NODE NAMES
Name      IP Address
clan-1a03  135.8 .118.211
clan-2a03  135.8 .118.212
clan-3a03  135.8 .118.213
cms        135.8 .118.5
default    0 .0 .0 .0
medpro-1a04 135.8 .118.221
medpro-2a04 135.8 .118.222
medpro-3a04 135.8 .118.223
procr      135.9 .1 .1
```

5.3. Skill Group configuration for CMS

The following screenshots display the configuration required by MultiVantage for CMS to collect group measurements.

display hunt-group 100	HUNT GROUP	Page 2 of 3
Skill? y	Expected Call Handling Time (sec): 180	
AAS? n	Acceptable Service Level (sec): 20	
Measured: both		
Supervisor Extension:		
Controlling Adjunct: none		
VuStats Objective:		
Timed ACW Interval (sec):		
	Redirect on No Answer (rings):	
	Redirect to VDN:	
	Forced Entry of Stroke Counts or Call Work Codes? n	

7. General Test Approach

The interoperability test included feature functionality, load and performance tests. The load and performance data was collected from the Avaya S8700/G600, the CMS, and the Spectrum V-Display server, client and a wallboard. An Abacus bulk call generator was used to generate 30,000 calls/hour for an overnight test. The V-Display was configured to display the real time CMS call records on a wallboard. Displayed call records were successfully compared to the CMS call records. The V-Display was also monitored using a performance monitoring application, which monitored for CPU usage and for impediments to CMS's main functions.

8. Support

Spectrum provides a toll free number and email address for technical support. For the technical support, call **800-392-5050** or email to support@specorp.com. For additional Spectrum product information refer to their web page at <http://www.specorp.com/>

9. Conclusion

This compliance test verified that the Spectrum V-Display successfully displays CMS call records on wallboards. The V-Display performance data indicates that the V-Display is fully compatible with the Avaya CMS and that the V-Display does not impede the CMS functions.

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