Wallboard Display
System Software

Release 3, Version 8
(Compatible with CMS R3V8)

October 2000
## Table of contents

**Preface**
- General Information ........................................ iv

**Chapter 1 Introduction**
- General Information ........................................ 1-1
- Description of WDS ........................................ 1-2
- Helpline/Escalation ........................................ 1-3
  - Who to Contact ........................................... 1-3
  - After the Initial Contact ................................. 1-4

**Chapter 2 User Basics**
- General Information ........................................ 2-1
- Terminology .................................................... 2-2
- Moving Around the WDS Interface .......................... 2-3
  - Making a Menu Selection ................................... 2-3
  - Special Keys ................................................ 2-3
- Screen-Labeled Keys (SLK’s) ................................ 2-5
- Accessing WDS ................................................. 2-6
- Exiting WDS .................................................... 2-7

**Chapter 3 Main Menu**
- General Information ........................................ 3-1
- WDS Main Menu (Split Data Installation) ................. 3-2
- WDS Main Menu (VDN Data Installation) .................... 3-3
- Main Menu Screen-Labeled Keys ............................ 3-4

**Chapter 4 Message Administration**
- General Information ........................................ 4-1
- Message Administration Screen ............................ 4-2
  - Purpose ..................................................... 4-2
- Creating, Scheduling and Storing Wallboard Messages .... 4-3
- Displaying Wallboard Messages ............................. 4-4
- Deleting Wallboard Messages ................................ 4-5
- Changing Wallboard Message Attributes .................... 4-6
- Starting/Stopping Wallboard Messages ...................... 4-7
- Listing Wallboard Messages ................................ 4-8
- Priority Messages ........................................... 4-10
- Wallboard Message Screen SLK’s ........................... 4-11
Chapter 5  
Change Wallboard Configuration  
General Information ................................................. 5-1  
Change Wallboard Configuration Screen (Split Data) ............... 5-2  
  Purpose ............................................................... 5-2  
Change Wallboard Configuration Screen (VDN Data) ............... 5-3  
  Purpose ............................................................... 5-3  
Board Description Section ........................................... 5-4  
  Configuration Number ........................................... 5-4  
  Status ................................................................. 5-4  
  Serial TTY Device ................................................. 5-4  
  Wallboard Address ............................................... 5-4  
  Display Mode ..................................................... 5-5  
    Normal ............................................................ 5-5  
    Thres1 (Threshold 1) ........................................... 5-5  
    Thres2 (Threshold 2) ........................................... 5-5  
    Refresh ........................................................... 5-5  
ACD Data Display Section ........................................... 5-6  
  Data Heading ...................................................... 5-6  
  Data ................................................................. 5-6  
  Thres1 (Threshold 1) ............................................. 5-8  
  Thres2 (Threshold 2) ............................................. 5-8  
  Mode ................................................................. 5-8  
    Alarm ............................................................. 5-8  
    Freq (Frequency) ............................................... 5-8  
    Split (Split Data Installation) ................................. 5-8  
    VDN Group Name (VDN Data Installation) ..................... 5-8  
    ACD ............................................................... 5-8  
Change Wallboard Configuration Screen SLK’s ....................... 5-9

Chapter 6  
VDN Group Assignment  
General Information ................................................ 6-1  
VDN Group Assignments Screen .................................... 6-2  
  Purpose ............................................................. 6-2  
Creating and Storing VDN Groups .................................. 6-3  
Deleting VDN Groups ................................................. 6-4  
Changing VDN Groups ............................................... 6-5  
Listing VDNs in a VDN Group ...................................... 6-6  
VDN Group Assignments Screen SLK’s ............................... 6-7

Chapter 7  
Start/Stop Wallboard Display  
General Information ................................................ 7-1  
Start/Stop Wallboard Display Screen ................................ 7-2  
  To Start All the Wallboards .................................... 7-2  
  To Stop All the Wallboards ..................................... 7-2  
Start/Stop Wallboard Display Screen SLK’s ....................... 7-3
<table>
<thead>
<tr>
<th>Appendix</th>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix A</td>
<td>Configuration Guidelines</td>
<td>A-1</td>
</tr>
<tr>
<td></td>
<td>General Information</td>
<td>A-1</td>
</tr>
<tr>
<td></td>
<td>Determining Refresh Rates for the WDS</td>
<td>A-2</td>
</tr>
<tr>
<td></td>
<td>Recommended WDS Configuration and Refresh Rate</td>
<td>A-10</td>
</tr>
<tr>
<td>Appendix B</td>
<td>On-Line Help Subsystem</td>
<td>B-1</td>
</tr>
<tr>
<td></td>
<td>General Information</td>
<td>B-1</td>
</tr>
<tr>
<td></td>
<td>Accessing the Help Subsystem</td>
<td>B-2</td>
</tr>
<tr>
<td></td>
<td>Sizing the Help Subsystem</td>
<td>B-3</td>
</tr>
<tr>
<td></td>
<td>Moving in the Help Screens</td>
<td>B-4</td>
</tr>
<tr>
<td>Appendix C</td>
<td>Troubleshooting</td>
<td>C-1</td>
</tr>
<tr>
<td></td>
<td>General Information</td>
<td>C-1</td>
</tr>
<tr>
<td></td>
<td>Troubleshooting Flowchart</td>
<td>C-2</td>
</tr>
<tr>
<td></td>
<td>Flowchart Items Explained</td>
<td>C-3</td>
</tr>
<tr>
<td></td>
<td>Reset Wallboard Port</td>
<td>C-11</td>
</tr>
</tbody>
</table>
Preface - General Information

The CMS Wallboard Display System Administration Guide - Release 8 document was written primarily for the CMS Wallboard Display System (WDS) administrator.

Organization of This Document

The following list describes the contents of each chapter and appendix in this document:

Chapter 1

“Introduction” outlines the various WDS releases and trouble reporting procedures.

Chapter 2

“User Basics” introduces WDS terminology and basic navigation of the software.

Chapter 3

“Main Menu” presents the functionality of the WDS Main Menu.

Chapter 4

“Message Administration” Describes how to send non-ACD data display messages.

Chapter 5

“Change Wallboard Configuration” illustrates how the user configures the display of ACD data on the wallboards.
Chapter 6

"VDN Group Assignment"
Describes how to group VDN(s) into VDN groups for ACD data display.

Chapter 7

"Start/Stop Wallboard Display"
demonstrates how to start and stop the functionality of all the wallboards.

Appendix A

“Configuration Guidelines”
describes how to determine the refresh rate of the WDS.

Appendix B

“On-Line Help Subsystem”
Expands on the details of the Help Subsystem provided in each chapter.

Appendix C

“Troubleshooting”
provides basic information to assist in eliminating WDS difficulties.
General Information

This guide gives the information needed to administer the Release 8 (R8) Wallboard Display System (WDS).

This chapter outlines:

• The WDS package

• Reporting problems with the WDS
Description of WDS

The Release 8 Wallboard Display System (R8 WDS) is a software product used by business customers that have an Lucent Technologies Release 3 Version 2 Call Management System (R3V2 CMS) load 3ragh or newer. The WDS accesses real-time and historical split or VDN data and transmits the user requested data to Spectrum 4200C (or other compatible manufacturers) wallboard(s) for display. The wallboard software is user accessible via a CMS “Main Menu Addition” on CMS supported terminals.

R8 WDS software has the ability to access CMS split data or CMS VDN data, not both. The initial installation of the software is split based. To upgrade the R8 WDS software to be VDN based, an additional charge will be incurred by the user.

WDS has the ability to combine historical and real-time split or VDN data for display.
Helpline/Escalation

Who to Contact

For a WDS problem, call Avaya Professional Services Monday through Friday 6am-6pm MST/MDT on 1-877-927-6662 to report the problem and obtain a trouble ticket number to escalate the problem through the services organization.

Be prepared to give the following information:

- Your full name, your organization, and a phone number where Avaya can contact you concerning the trouble.

- The Installation Location (IL) number. This is a 10-digit number from an Avaya database that helps service personnel look up the details of your WDS installation and environment.

- The phone number that off-site engineer can use to remotely dial into your CMS system.

- Your computer model, switch model, and any unique characteristics of your Wallboard environment you think might be relevant.

- The type and symptoms of the problem - describe exactly.

**NOTE:** If the trouble report is not within 15 days of initial installation, you will be invoiced for the work done to troubleshoot your system. *Service contracts covering CMS do not cover WDS software.*
After the Initial Contact

When you report the trouble to Avaya, you should receive a **trouble-ticket number**. Be sure to get this number from the person you are talking to. Use this number when you talk to an Avaya representative about the problem after the initial report.

According to Avaya internal rules, the trouble ticket must be **cleared**. This means that you must receive notification that the trouble has been cleared up, and agree that it has. If you receive no such notification in a reasonable period, call **1-877-927-6662** again and ask for a resolution on your trouble ticket number.
General Information

This Chapter explains the basics of the WDS user interface. The following information is covered in this chapter:

- Necessary terms for using WDS
- Moving around WDS
- Screen-Labeled Keys (SLK)
- Accessing WDS
- Exiting WDS
Terminology

Before using WDS, the user needs to know the meaning of several terms.

- **Action Field**: Fields where the displayed action is to be performed.
- **Choice Field**: Fields where the user is given a list of options and marks the desired option.
- **Display Field**: Fields where the information displayed cannot be changed. The field is informational only.
- **Field Information Message**: Informational field, located in the lower left-hand corner, that provides a brief explanation of the field the cursor is positioned at.
- **Input Field**: Field requiring user input.
- **Wallboard Main Menu**: First screen displayed when entering WDS.
- **Menu Item**: Character choice found on the “Main Menu” that moves into the subsequent screen.
- **Screen-Labeled Key (SLK)**: The first eight function keys at the top of the keyboard that correspond to the screen labels at the bottom of the terminal screen. The labels indicate the function each key performs.
- **Toggle Field**: Fields where the displayed setting changes by pressing the **space bar**.
- **User Screen**: Screen where the user configures or performs actions that affect WDS.
Moving Around the WDS Interface

Making a Menu Selection

There are two ways to make a menu selection:

- Typing the high-lighted letter of the menu item (for example, C for Change Wallboard Configuration). Either upper- or lower-case letters work.

- Using the up or down arrow keys to make a selection, and then pressing enter/return or using the tab or shift+tab.

Special Keys

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Down Arrow</td>
<td>The down arrow moves the cursor down to the next menu item or next input field.</td>
</tr>
<tr>
<td>Up Arrow</td>
<td>The up arrow moves the cursor to the previous menu item or previous input field. On the configuration screen, the <strong>up arrow</strong> does not move the cursor from the sections within a screen (see, SLK’s F7 and F8 in this section).</td>
</tr>
<tr>
<td>Right Arrow</td>
<td>Moves the cursor one position to the right in an input field and stops when the end of the field is reached. This movement is nondestructive (that is, any information in the field is not changed).</td>
</tr>
<tr>
<td>Left Arrow</td>
<td>Moves the cursor one position to the left in an input field and stops when the beginning of the field is reached. This movement is nondestructive (that is, any information in the field is not changed).</td>
</tr>
<tr>
<td>Key</td>
<td>Description</td>
</tr>
<tr>
<td>----------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Tab</td>
<td>Pressing the <strong>tab</strong> key moves the cursor to the next field or menu selection.</td>
</tr>
<tr>
<td>Enter/Return</td>
<td>Pressing the <strong>enter</strong> or <strong>return</strong> key on a menu item indicates that WDS is to act on the selection (for example, made a menu selection). Pressing <strong>enter</strong> or <strong>return</strong> on an input field moves the cursor to the next input field.</td>
</tr>
<tr>
<td>Back Space</td>
<td>The <strong>ctrl+h</strong> or the <strong>back space</strong> key erases the previous character in an input field (destructive backward space).</td>
</tr>
<tr>
<td>Space Bar</td>
<td>Pressing the <strong>space bar</strong> in an input field erases the next character (destructive forward space). Pressing the <strong>space bar</strong> in a toggle field toggles to the next input choice.</td>
</tr>
<tr>
<td>F8 Function Key</td>
<td>There are three screens that are divided into two sections (input fields inside and outside of the box): <em>Change Wallboard Configuration</em>. The F8 SLK can be used to move between the sections.</td>
</tr>
</tbody>
</table>
Screen-Labeled Keys

The first eight “F” (function) keys at the top of the keyboard correspond to the screen labels (in reverse video) at the bottom of the terminal screen. The screen labels indicate the function each key performs. A description of the SLK’s that are common on all menus follows:

Help SLK (F1)

The Help SLK is “F1” on all screens of WDS. The Help SLK allows access to “Field Help” and “Screen Help”. Field Help messages are available for all fields and menu items. Screen Help is available for all screens.

Field Help

Pressing the Help SLK from any screen and cursor position opens “Field Help” for the field the cursor is positioned on. To close “Field Help” press enter/return or the esc key twice (esc+esc).

Screen Help

Pressing the Help SLK twice from any screen or once if in “Field Help” moves the user into “Screen Help” for the current screen. To close “Screen Help” press enter/return twice or the esc key four times, or a combination of enter/return and the esc key.

Note: The Field Help and Screen Help windows can be sized to full screen by pressing ctrl+p. The help screen size remains full screen until it is resized. To shrink the help window back down press ctrl+p.

Exit SLK (F5)

The Exit SLK is “F5” on all screens of WDS. From the “Main Menu” the Exit SLK closes WDS and returns the user to CMS. From the user screens the Exit SLK returns the user to the WDS “Main Menu”.

User Basics 2-5
Accessing WDS

WDS is a menu-driven system that is operated through a series of interactive screens. To use WDS, the user must first be given access in CMS to the “Main Menu Addition” for WDS. (See CMS Administration Guide for Main Menu Addition)
Exiting WDS

From the WDS “Main Menu” press the Exit SLK (F5). WDS is closed and the user is returned to the CMS “Main Menu”.
General Information

This chapter covers the functionality of the WDS Main Menu.

WDS R8 software has the ability to access CMS split data or CMS VDN data, but not both. The default installation of the WDS software is split based.

The Main Menu screens for both split data and VDN data installations are depicted in this chapter.

The following information is covered in this chapter:

- Split Main Menu for split data installation
- VDN Main Menu for VDN data installation
- Menu Items on the Main Menu
- Main Menu Screen-Labeled Keys (SLK’s)
WDS Main Menu (Split Data Installation)

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose</td>
<td>The WDS Main Menu (Split Data Installation) provides access to the three sub-menu’s, where the wallboard(s) can be administered. The three menu choices are:</td>
</tr>
<tr>
<td>- Message Administration</td>
<td>To start, stop, add, delete, schedule or edit wallboard messages.</td>
</tr>
<tr>
<td>- Change Wallboard Configuration</td>
<td>To add, delete, or edit ACD data configurations for wallboard display.</td>
</tr>
<tr>
<td>- Start/Stop Wallboard Display</td>
<td>To start/stop the wallboard(s).</td>
</tr>
</tbody>
</table>
WDS Main Menu (VDN Data Installation)

Purpose

The WDS Main Menu (VDN Data Installation) provides access to the three sub-menu’s, where the wallboard(s) can be administered. The three menu choices are:

- **Message Administration**
  - To start, stop, add, delete, schedule or edit wallboard messages.

- **Change Wallboard Configuration**
  - To add, delete, or edit ACD data configurations for wallboard display.

- **Start/Stop Wallboard Display**
  - To start/stop the wallboard(s).
Main Menu Screen-Labeled Keys

The first eight “F” (function) keys at the top of the keyboard correspond to the screen labels (in reverse video) at the bottom of the terminal screen. The screen labels indicate the function each key performs. A description of the SLK’s found on the Main Menu follows:

Help SLK (F1) The Help SLK accesses the “Field Help” and “Screen Help”. Field Help messages are available for all the menu items. Screen Help is available for the Main Menu.

No Function (F2) No action performed.

No Function (F3) No action performed.

No Function (F4) No action performed.

Exit SLK (F5) Closes WDS and returns the user to CMS.

No Function (F6) No action performed.

Previous Field (F7) Moves the cursor to the previous field.

Next Field (F8) Moves the cursor to the next field.
General Information

This chapter covers the administration of non-ACD data display messages, the communication of information not necessarily related to the management of the call center. From the Message Administration screen the user can:

- Create, Schedule and Store Wallboard Messages
- Display Wallboard Messages
- Delete Wallboard Messages
- Change Wallboard Message Attributes
- Start/Stop Wallboard Messages
- List All Wallboard Messages
- Create a Priority Message
Message Administration Screen

Purpose

From the Message Administration screen, the user can administer the transmission of information displayed on the bottom half of the wallboard(s).

This information may be call center related (non-ACD data) or general information, such as:

“Heavy call volume expected this week, due to sales promotion”

“Happy Birthday !! Mike Johnson”

“White SUV license SKH-3451 your lights are on!!”
Creating, Scheduling and Storing Wallboard Messages

To create and store a new Wallboard Message:

1. In the Message Destination field enter a valid configuration number. This information can be found in the “Change Wallboard Configuration” menu.

The Next SLK (F3) will step through defined message(s).

2. Move the cursor to the second input field

3. Type the new message

4. Press the Save SLK (F6)

Look for “Successful” message in lower left-hand corner of the screen

WDS can hold up to 32 saved messages with 5 active messages per board. The maximum length of a message is 78 characters.

To schedule a message (default is Monday through Friday - continuous/24 hours daily):

1. Move the cursor to the Daily Days toggle fields

2. Use the <SPACE BAR> to select the days of the week for the message to be active: Y - active, space - inactive

3. Move the cursor to the Hourly input fields

4. Enter a military start and stop time for the message: hour 0 to 23, minute 0 to 59

5. Press the Save SLK (F6)
Displaying Wallboard Messages

To display a stored Wallboard Message:

1. Press the Next SLK (F3)

2. The first stored message along with the Message Destination and Message Attributes will be displayed in all the fields on the screen

3. Press the Next SLK (F3) to display the next stored message

Look for “Successful” message in lower left-hand corner of the screen
Deleting Wallboard Messages

To delete a stored Wallboard Message:

1. Press the **Next** SLK (F3) until the desired message and its attributes to be deleted is displayed.

2. Press the **Delete** SLK (F7).

Look for “Successful” message in lower left-hand corner of the screen.
Changing Wallboard Message Attributes

To change a stored Wallboard Message Attributes:

1. Press the Next SLK (F3) until the desired message and its attributes are displayed.

2. Move the cursor to the input fields in the Message Frequency and Attributes section (below message input field).

3. Change desired message attributes.

4. Press the Change SLK (F4).

   If the message input field or Message Destination input field is changed, press the Save SLK (F6).

Look for “Successful” message in lower left-hand corner of the screen.
Starting/Stopping Wallboard Messages

To start a Wallboard Message:

1. Press the Next SLK (F3) until the desired message and its attributes to be deleted is displayed.
2. Move the cursor to the Message Status field
3. Use the <SPACE BAR> to set the field to Active
4. Press the Save SLK (F6) if the message was just created
   or
press the Change SLK (F4) for a stored message
5. Look for “Successful” message in lower left-hand corner of the screen

To stop a Wallboard Message:

1. Press the Next SLK (F3) until the desired message and its attributes to be deleted is displayed.
2. Move the cursor to the Message Status input field
3. Use the <SPACE BAR> to set the field to Inactive
4. Press the Save SLK (F6) if the message was just created
   or
press the Change SLK (F4) for a stored message

Look for “Successful” message in lower left-hand corner of the screen

NOTE: A wallboard message cannot be started if the wallboard software is not activated (see Chapter 8).
Listing Wallboard Messages

To list all stored Wallboard Messages:

1. Press the List SLK (F8)
2. Look for the pop-up window containing stored messages. If a pop-up window does not appear, there are no stored messages.

Pop-up window column definitions:

- **Message**: message displayed up to 20 characters
- **Stat**: message status: I - Inactive, A - Active

Message Color: Green
Priority Message: NO

Enter an ACTIVE configuration number.

Figure 4-2: List of stored messages
<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days</td>
<td>status of days of week for message starting on Sunday: _ - message inactive, Y - message active</td>
</tr>
<tr>
<td>Start</td>
<td>start time of message on active days, military (hour 0 - 23, minute 0 - 59)</td>
</tr>
<tr>
<td>Stop</td>
<td>stop time of message on active days, military (hour 0 - 23, minute 0 - 59)</td>
</tr>
<tr>
<td>Column 7</td>
<td>message color: R - red, Y - yellow, G - green</td>
</tr>
<tr>
<td>Column 8</td>
<td>priority message - P</td>
</tr>
</tbody>
</table>
Priority Messages

When a priority message is sent to a wallboard that is currently displaying a non-ACD data display message, the priority message is the only message displayed. If two priority messages are sent to the same wallboard, only the first priority message that is activated will be sent.

To send a Wallboard Priority Message:

1. Make sure the message to be broadcast has been stored (See: Creating and Storing Wallboard Messages 4-3)
2. Move the cursor to the Message Status input field
3. Use the <SPACE BAR> to toggle to ACTIVE option
4. Move the cursor to the Priority Message input field
5. Use the <SPACE BAR> to toggle to YES option
6. Press the Save SLK (F6) if the message was just created
   or
7. press the Change SLK (F4) for a stored message

Look for “Successful” message in lower left-hand corner of the screen
Wallboard Message Screen SLK’s

The first eight “F” (function) keys at the top of the keyboard correspond to the screen labels (in reverse video) at the bottom of the terminal screen. The screen labels indicate the function each key performs. A description of the SLK’s found on the Message Administration Screen follows:

Help SLK (F1)  The **Help** SLK accesses the “Field Help” and “Screen Help”. Field Help messages are available for all the input fields. Screen Help is available for the Wallboard Message Screen.

Next SLK (F3)  Displays first stored message, continued depressions cycles through all the stored messages.
<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change SLK (F4)</td>
<td>Changes the message frequency and attributes of a stored message.</td>
</tr>
<tr>
<td>Exit SLK (F5)</td>
<td>Returns the user to the WDS “Main Menu”.</td>
</tr>
<tr>
<td>Save SLK (F6)</td>
<td>Stores the message and its scheduling parameters and attributes.</td>
</tr>
<tr>
<td>Delete SLK (F7)</td>
<td>Deletes the message displayed in the input fields.</td>
</tr>
<tr>
<td>LIST Field (F8)</td>
<td>Displays all stored messages in a pop-up window.</td>
</tr>
</tbody>
</table>
General Information

This chapter covers the configuration of ACD data display messages on the wallboard(s). An ACD data display message is the relaying of CMS data to the wallboard(s). The following information is covered in this chapter:

- The Board Description section
- The ACD Data Display section

*WDS R8 software has the ability to access CMS split data or CMS VDN data, but not both. The default installation of the WDS software is split based.*

*The Change Wallboard Configuration screens for both split data and VDN data installations are depicted in this chapter.*
Change Wallboard Configuration Screen (Split Data Installation)

Purpose

The **split** ACD data display messages carried on the top half of the wallboard(s) are administered from the Change Wallboard Configuration screen. The split ACD data is passed from CMS to the WDS interface. The output of the split data is defined by the user, such as:

- Calls_in_Que:5  #_in_AUX:3  #_in_ACW:2  #_Avail:0
- SVCLVL:79.5  ASA:21  QUEUED:2
- SPLIT:4  WAITING:6  SPLIT:7  WAITING:3

The Change Wallboard Configuration screen is broken into two sections. The upper half of the screen is the Board Description section. The lower half of the screen is the split ACD Data Display section.
Change Wallboard Configuration Screen (VDN Data Installation)

Figure 6-2: WDS Configuration Screen (split data installation)

Purpose

The VDN ACD data display messages carried on the top half of the wallboard(s) are administered from the Change Wallboard Configuration screen. The VDN ACD data which is the sum of VDNs in a VDN group, is passed from CMS to the WDS interface. The output of this data is defined by the user, such as:

- Calls_in_Queue:5  #_in_AUX:3  #_in_ACW:2  #_Avail:0
- SVCLVL:79.5  ASA:21  QUEUED:2
- SPLIT:4  WAITING:6  SPLIT:7  WAITING:3

The Change Wallboard Configuration screen is broken into two sections. The upper half of the screen is the Board Description section. The lower half of the screen is the ACD Data Display section.
Board Description Section

This section allows the user to define 1-32 board configurations. The number of wallboards associated with a configuration does not require a one to one relationship. Example: configuration 1 might be associated with a single wallboard, while configuration 2 is associated with many wallboards. The WDS allows a maximum of 32 wallboards system-wide.

Configuration Number

This is a display field. To change the displayed configuration, press the Next SLK (F3) or the Prev SLK (F4).

Status

This is a toggle field. Pressing the Space Bar toggles the field between “ON” and “OFF” for the displayed configuration.

Serial TTY Device

This field requires the CMS physical address (serial port) that is connected to the wallboard(s). For example:

- on a SPARC 10 /dev/s_pdev116

**Note:** There cannot be a UNIX getty associated with the entered CMS serial port. There also, cannot be a UNIX printer administered to this CMS serial port.

Wallboard Address

Enter the address (1-99) established by the SPECTRUM hand-held remote control for the wallboards. This field along with the Serial TTY Device field are used to identify the wallboard(s). Each wallboard is given an address from 1 to 99 via the hand-held remote control. The wallboards having the same address of any given configuration, will receive the same data (defined in the ACD Data Display section). **An address of 0 (zero), means broadcast the data to all wallboards connected to this serial port.**
Display Mode

This is a toggle field. Pressing the Space Bar toggles the field between three display modes, each having three speeds (slow, medium, and fast):

- **Auto** - various modes automatically display the data.
- **Hold** - data remains stationary.
- **Rotate** - data travels from right to left.

This field is used to configure the display mode for the currently displayed configuration.

Normal

This is a toggle field. Pressing the Space Bar toggles the field between “Green”, “Yellow”, and “Red”. The **Data Heading:Data** (see ACD Data Display section) will be displayed in the Normal color if **Thres1** (from the ACD Data Display section) is not exceeded.

Thres1 (Threshold 1)

This is a toggle field. Pressing the Space Bar toggles the field between “Green”, “Yellow”, and “Red”. The **Data Heading:Data** (see ACD Data Display section) will be displayed in the Thres1 color if **Thres1** (from the ACD Data Display section) is exceeded and **Thres2** (from the ACD Data Display section) is not exceeded.

Thres2 (Threshold 2)

This is a toggle field. Pressing the Space Bar toggles the field between “Green”, “Yellow”, and “Red”. The **Data Heading:Data** (see ACD Data Display section) will be displayed in the Thres2 color if **Thres2** (from the ACD Data Display section) is exceeded.

Refresh

This is an input field. Enter the time in seconds (update interval) that new data is sent to all wallboards. Refresh field is not a single configuration setting, it affects all wallboards. The minimum is ten (10) seconds, but is dependent upon the users refresh rate established in CMS.

**NOTE:** The input in this field combined with Display Mode setting affects the presentation of data. **The refresh rate should allow enough time for the display mode to complete its presentation of data.**
ACD Data Display Section

This section allows the user to select the data items from the desired ACD and split or VDN group to be displayed for this configuration. The data is displayed in a Data_Heading:Data (couple) format. For example:

Calls_in_Que:15

Where Data_Heading is a user defined caption and Data is real-time data passed from CMS. A maximum of eight couples can be defined for each configuration.

Data Heading

Type the desired caption to be displayed for this couple. A maximum of 12 character can be input. The space character is not allowed. “None” indicates no header. Inactive couples are denoted by the ! (exclamation symbol).

Data

Enter the data item to be displayed for this couple.

<table>
<thead>
<tr>
<th>Data Item Number</th>
<th>Data Item</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Current Time at ACD (switch tine for acd number)</td>
<td>HH:MM</td>
</tr>
<tr>
<td>2</td>
<td>Current Time at CMS</td>
<td>HH:MM</td>
</tr>
<tr>
<td>3</td>
<td>Current Date at ACD (switch date for acd number)</td>
<td>M:D:Y</td>
</tr>
<tr>
<td>4</td>
<td>Current Date at CMS</td>
<td>M:D:Y</td>
</tr>
<tr>
<td>5</td>
<td>Calls In Queue</td>
<td>NNN</td>
</tr>
<tr>
<td>6</td>
<td>Oldest Call Waiting</td>
<td>NNN</td>
</tr>
<tr>
<td>7</td>
<td>Average Speed of Answer This Interval</td>
<td>NNN</td>
</tr>
<tr>
<td>8</td>
<td>Average Speed of Answer For Day</td>
<td>NNN</td>
</tr>
<tr>
<td>9</td>
<td>Average Abandon Time This Interval</td>
<td>NNN</td>
</tr>
<tr>
<td>10</td>
<td>Average Abandon Time For Day</td>
<td>NNN</td>
</tr>
<tr>
<td>11</td>
<td>Percent Calls Answered This Interval</td>
<td>%NN</td>
</tr>
<tr>
<td>12</td>
<td>Percent Calls Answered This Interval</td>
<td>%NN</td>
</tr>
<tr>
<td>13</td>
<td>Percent Calls Answered This Interval</td>
<td>%NN.NN</td>
</tr>
<tr>
<td>14</td>
<td>Percent Calls Answered For Day</td>
<td>%NN</td>
</tr>
<tr>
<td>15</td>
<td>Percent Calls Answered For Day</td>
<td>%NN</td>
</tr>
<tr>
<td>16</td>
<td>Percent Calls Answered For Day</td>
<td>%NN.NN</td>
</tr>
<tr>
<td>17</td>
<td>Percent Calls Abandoned This Interval</td>
<td>NN</td>
</tr>
<tr>
<td>18</td>
<td>Percent Calls Abandoned This Interval</td>
<td>%NN</td>
</tr>
<tr>
<td>Data Item Number</td>
<td>Data Item</td>
<td>Format</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>19</td>
<td>Percent Calls Abandoned This Interval</td>
<td>%NN.NN</td>
</tr>
<tr>
<td>20</td>
<td>Percent calls Abandoned for Day</td>
<td>NN</td>
</tr>
<tr>
<td>21</td>
<td>Percent calls Abandoned for Day</td>
<td>%NN</td>
</tr>
<tr>
<td>22</td>
<td>Percent calls Abandoned for Day</td>
<td>%NN.NN</td>
</tr>
<tr>
<td>23</td>
<td>Percent Service Level This Interval</td>
<td>NN</td>
</tr>
<tr>
<td>24</td>
<td>Percent Service Level This Interval</td>
<td>%NN</td>
</tr>
<tr>
<td>25</td>
<td>Percent Service Level This Day</td>
<td>%NN.NN</td>
</tr>
<tr>
<td>26</td>
<td>Percent Service Level This Day</td>
<td>NN</td>
</tr>
<tr>
<td>27</td>
<td>Percent Service Level This Day</td>
<td>%NN</td>
</tr>
<tr>
<td>28</td>
<td>Percent Service Level This Day</td>
<td>%NN.NN</td>
</tr>
<tr>
<td>29</td>
<td>Calls Offered This Interval</td>
<td>NNN</td>
</tr>
<tr>
<td>30</td>
<td>Calls Offered For This Day</td>
<td>NNN</td>
</tr>
<tr>
<td>31</td>
<td>Calls Answered This Interval</td>
<td>NNN</td>
</tr>
<tr>
<td>32</td>
<td>Calls Answered For This Day</td>
<td>NNN</td>
</tr>
<tr>
<td>33</td>
<td>Calls Abandoned This Interval</td>
<td>NNN</td>
</tr>
<tr>
<td>34</td>
<td>Calls Abandoned For This Day</td>
<td>NNN</td>
</tr>
<tr>
<td>35</td>
<td>Calls Outflowed This Interval</td>
<td>NNN</td>
</tr>
<tr>
<td>36</td>
<td>Calls Outflowed For This Day</td>
<td>NNN</td>
</tr>
<tr>
<td>37</td>
<td>Calls Accepted This Interval</td>
<td>NNN</td>
</tr>
<tr>
<td>38</td>
<td>Calls Accepted For This Day</td>
<td>NNN</td>
</tr>
<tr>
<td>39</td>
<td>Calls Inflowed This Interval</td>
<td>NNN</td>
</tr>
<tr>
<td>40</td>
<td>Calls Inflowed For This Day</td>
<td>NNN</td>
</tr>
<tr>
<td>41</td>
<td>On ACD Calls This Interval</td>
<td>NNN</td>
</tr>
<tr>
<td>42</td>
<td>Average Talk Time This Interval</td>
<td>NNN</td>
</tr>
<tr>
<td>43</td>
<td>Average Talk Time For This Day</td>
<td>NNN</td>
</tr>
<tr>
<td>44</td>
<td>Average ACW Time This Interval</td>
<td>NNN</td>
</tr>
<tr>
<td>45</td>
<td>Average ACW Time For This Day</td>
<td>NNN</td>
</tr>
<tr>
<td>46</td>
<td>Split Number</td>
<td>NNN</td>
</tr>
<tr>
<td>47</td>
<td>Agents in Other Calls This Interval</td>
<td>NNN</td>
</tr>
<tr>
<td>48</td>
<td>Agents in Ring State This Interval</td>
<td>NNN</td>
</tr>
<tr>
<td>49</td>
<td>Agents on Ring Extension In Calls This Interval</td>
<td>NNN</td>
</tr>
<tr>
<td>50</td>
<td>Agents on Ring Extension Out Calls This Interval</td>
<td>NNN</td>
</tr>
<tr>
<td>51</td>
<td>Agents Staffed This Interval</td>
<td>NNNN</td>
</tr>
<tr>
<td>52</td>
<td>Agents Available This Interval</td>
<td>NNNN</td>
</tr>
<tr>
<td>53</td>
<td>Agents In After Call Work This Interval</td>
<td>NNNN</td>
</tr>
<tr>
<td>54</td>
<td>Agents In AUX This Interval</td>
<td>NNNN</td>
</tr>
<tr>
<td>55</td>
<td>Agents On After Call Work In Calls This Interval</td>
<td>NNNN</td>
</tr>
<tr>
<td>56</td>
<td>Agents On After Call Work Out Calls This Interval</td>
<td>NNNN</td>
</tr>
<tr>
<td>57</td>
<td>Agents On AUX In Calls This Interval</td>
<td>NNNN</td>
</tr>
<tr>
<td>58</td>
<td>Agents On AUX Out Calls This Interval</td>
<td>NNNN</td>
</tr>
</tbody>
</table>
**Thres1 (Threshold 1)**

Enter a value for the first data threshold. When the real-time data does not exceed this value the couple is displayed in the **Normal** color (from the Board Description section). When the value is exceeded and the Thres2 setting is not exceeded the couple is displayed in the **Thres1** color (from the Board Description section).

**Thres2 (Threshold 2)**

Enter a value for the second data threshold. When the real-time data exceed this value the couple is displayed in the **Thres2** color (from the Board Description section).

**Mode**

This is a toggle field. Pressing the **Space Bar** toggles the field between “N” (normal) and “R” (reverse).

**N**, Normal, is used for “ascending” thres-holding (i.e. number of calls in queue, where thres-hold 2 is greater than thres-hold 1).

**R**, Reverse, is used for “descending” thres-holding (i.e. number of calls in queue, where thres-hold 1 is greater than thres-hold 2).

**Alarm**

Enter a value for an alarm threshold. When the alarm threshold is exceeded the wallboard will beep on the first occurrence.

**Freq**

Enter a value for the number of seconds before the wallboard beeps again (after the first beep) for the same occurrence of the alarm threshold exception.

**Split**

This field appears on **split based** installations only. Enter the split number the real-time data for the couple will be based on.

**VDN Group Name**

This field appears on **VDN based** installations only. The VDN Group Name must first be defined in the VDN Group Assignment screen. **The ACD data will be a sum of all the VDNs within the defined group.**

**ACD**

Enter the ACD number for real-time data.
Change Wallboard Configuration Screen SLK’s

The first eight “F” (function) keys at the top of the keyboard correspond to the screen labels (in reverse video) at the bottom of the terminal screen. The screen labels indicate the function each key performs. A description of the SLK’s found on the Wallboard Message Screen follows:

Help SLK (F1)  The Help SLK accesses the “Field Help” and “Screen Help”. Field Help messages are available for all the input fields. Screen Help is available for the Wallboard Message Screen.

CHOICES SLK (F2)  VDN based installation only. Displays VDN group names (cursor must be in VDN Group Name input field). Use the up/down arrow keys to move between VDN group names and the enter/return key to select a VDN group.
| **Save SLK (F2)** | Split based installations only. After creating a new configuration or editing an existing configuration, press the **Save SLK “F2”**. Saves only the configuration currently displayed. |
| **Next SLK (F3)** | To change to the next configuration press the **Next SLK “F3”**. The WDS allows the setup of 1-32 configurations. If, the interface is displaying the 32nd configuration and the **Next SLK** is pressed the 1st configuration will be displayed. |
| **Prev SLK (F4)** | To change to the previous configuration press the **Prev SLK “F4”**. The WDS allows the setup of 1-32 configurations. If, the interface is displaying the 1st configuration and the **Prev SLK** is pressed the 32nd configuration will be displayed. |
| **Exit SLK (F5)** | Returns the user to the WDS “Main Menu”. |
| **No Function (F6)** | In the split data installation, no action performed. |
| **Save SLK (F6)** | VDN based installations only. After creating a new configuration or editing an existing configuration, press the **Save SLK “F6”**. Saves only the configuration currently displayed. |
| **Previous Field (F7)** | Moves the cursor between screen sections (box on the screen). The screen is divided into two sections: input fields that are inside and outside the box. |
| **Next Field (F8)** | Moves the cursor between screen sections (box on the screen). The screen is divided into two sections: input fields that are inside and outside the box. |
General Information

This chapter covers the administration of VDN Group Names for display of ACD VDN data on wallboards.

WDS R8 software has the ability to access CMS split data or CMS VDN data, but not both. The default installation of the WDS software is split based. This screen will not be present on default installations, only on upgrades.

The VDN Group Name is used in the VDN Group Name input field in the Change Wallboard Configuration screen. The VDNs associated with a VDN Group Name are summed together to display the ACD data.

From the VDN Group Assignment screen the user can:

- Create and Store VDN Groups
- Delete VDN Groups
- Change VDN Groups
- List VDNs in a VDN Group
VDN Group Assignments Screen

![VDN Group Assignments Screen](image)

**Purpose**

From the VDN Group Assignment screen, the user can administer the groupings of VDNs for the display of ACD data on the top half of the wallboard(s).

A VDN Group Name is comprised of one or up to 32 VDN numbers. VDN numbers can be in one or more VDN Groups.

The VDN Group Name is used in the *VDN Group Name* input field of the Change Wallboard Configuration screen.
Creating and Storing VDN Groups

To create and store a new VDN Group:

1. Move the cursor to the VDN Group Name input field
2. Type the new unique VDN Group Name
3. Move the cursor to the VDN input fields (inside the square box)
4. Enter one or more VDN numbers
5. Press the Save SLK (F4)
6. Look for “Successful” message in lower left-hand corner of the screen

WDS can hold up to 8 VDN groups.
Deleting VDN Groups

To delete a stored VDN Group:

**NOTE:** Deleting a VDN group will delete ALL the VDN(s) associated with the VDN group.

1. Move the cursor to the *VDN Group Name* input field

2. Press the *Choices* SLK (F2)

3. Move the cursor to the VDN Group Name to be deleted by the arrow key

4. Press *Enter/Return*

5. Press the *Delete* SLK (F6)

6. Look for “Successful” message in lower left-hand corner of the screen
Changing VDN Groups

To change VDNs associated with a VDN Group Name:

1. Move the cursor to the *VDN Group Name* input field
2. Press the *Choices* SLK (F2)
3. Move the cursor to the VDN Group Name to be *changed* by the arrow key
4. Press *Enter/Return*
5. Move the cursor to the *VDN* input fields (inside the square box)
6. Enter or delete the desired VDN numbers
7. Press the *Save* SLK (F4)
   Look for “Successful” message in lower left-hand corner of the screen

To change VDN Group Name associated with VDN numbers:

1. Move the cursor to the *VDN Group Name* input field
2. Press the *Choices* SLK (F2)
3. Move the cursor to the VDN Group to be *changed* by the arrow key
4. Press *Enter/Return*
5. Press the *List* SLK (F3)
6. Enter a new unique VDN Group name
7. Press the *Save* SLK (F4)
   Look for “Successful” message in lower left-hand corner of the screen
Listing VDNs in a VDN Group

To List the VDNs that are associated with a VDN Group Name:

1. Move the cursor to the VDN Group Name input field

2. Press the Choices SLK (F2)

3. Move the cursor to the VDN Group to be listed by the arrow key

4. Press Enter/Return

5. Press the List SLK (F3)

6. Look for “Successful” message in lower left-hand corner of the screen
VDN Group Assignments Screen SLK’s

The first eight “F” (function) keys at the top of the keyboard correspond to the screen labels (in reverse video) at the bottom of the terminal screen. The screen labels indicate the function each key performs. A description of the SLK’s found on the VDN Group Assignment Screen follows:

Help SLK (F1)  The Help SLK accesses the “Field Help” and “Screen Help”. Field Help messages are available for all the input fields. Screen Help is available for the VDN Group Assignment Screen.

Choices SLK (F2)  Displays the stored VDN Groups Names (Cursor must be in the VDN Group Name input field). Use the up/down arrow keys to move between stored VDN Group Names and the enter/return to select a stored VDN Group Name.

Figure 7-2: WDS VDN Group Assignment Screen Choices SLK (F2)
<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>List SLK (F3)</td>
<td>Displays the VDN numbers associated with the selected VDN Group Name.</td>
</tr>
<tr>
<td>Save SLK (F4)</td>
<td>Stores the VDN Group Name along with the associated VDN numbers that are displayed.</td>
</tr>
<tr>
<td>Exit SLK (F5)</td>
<td>Returns the user to the WDS “Main Menu”.</td>
</tr>
<tr>
<td>Delete SLK (F6)</td>
<td>Deletes the VDN Group Name along with the associated VDN numbers.</td>
</tr>
<tr>
<td>Prev SLK (F7)</td>
<td>Moves the cursor between screen sections (box on the screen). The screen is divided into two sections: input fields that are inside and outside the box.</td>
</tr>
<tr>
<td>Next Field (F8)</td>
<td>Moves the cursor between screen sections (box on the screen). The screen is divided into two sections: input fields that are inside and outside the box.</td>
</tr>
</tbody>
</table>
General Information

This chapter explains the Start/Stop Wallboard Display screen. From this screen the execution of all wallboards can be started or stopped.
Start/Stop Wallboard Display Screen

To Start All the Wallboards

Position the cursor on the Start action field and Enter/Return. Look for the “Successful” message in the lower left-hand corner of the screen.

To Stop All the Wallboards

Position the cursor on the Stop action field and Enter/Return. Look for the “Successful” message in the lower left-hand corner of the screen.
Start/Stop Wallboard Display Screen SLK’s

The first eight “F” (function) keys at the top of the keyboard correspond to the screen labels (in reverse video) at the bottom of the terminal screen. The screen labels indicate the function each key performs. A description of the SLK’s found on the Wallboard Message Screen follows:

- **Help SLK (F1)**: The **Help** SLK accesses the “Field Help” and “Screen Help”. Field Help messages are available for all the action fields. Screen Help is available for the Start/Stop Wallboard Display Screen.

- **No Function (F2)**: No action performed.

- **No Function (F3)**: No action performed.

- **No Function (F4)**: No action performed.

- **Exit SLK (F5)**: Returns the user to the WDS “Main Menu”.

- **No Function (F6)**: No action performed.

- **Previous Field (F7)**: Moves the cursor to the previous field.

- **Next Field (F8)**: Moves the cursor to the next field.
General Information

In order to keep the CMS system responsive, the average CPU occupancy should be limited to about 60%. Assuming that miscellaneous activities (e.g. starting up new reports, scrolling, administration, etc.) will consume about 10%, this leaves an occupancy of about 50%.

This section presents tools and guidelines to the user for determining a recommended refresh rate and a maximum configuration for the WDS software in an active CMS environment.
Determining Refresh Rates for the WDS

The program **Realtime** can be used to determine the appropriate refresh for all realtime reports and the WDS software.

**Using the Realtime Refresh Program**

The Realtime program is distributed with the CMS system. The program calculates the best (shortest) refresh rates a user can get in CMS real-time reports and the WDS software. The program bases its calculations on a selected computer and the configuration and use of the CMS.

**Note:** Use this program only if the user wants to know the shortest possible refresh rate.

**Options of the Realtime Refresh Program**

The program gives you two basic options for finding refresh rates:

- **Different Periods**
  The program finds the best possible refresh rate for each type of report. The best refresh rate for one type of report will normally differ from the best rate for another type of report.

- **Single Period**
  The program finds one best refresh rate that applies to all reports that are running. For this option, you must specify the exact number of reports of each type that will be running simultaneously.
Running the Program

At the system prompt type:

```
# cd /usr/tmp
#/cms/toolsbin/realtime
```

The following text appears:

**Realtime Program -- 11/14/95**

*enter* customer name, or just
hit return if it’s not known: sales

**Customer Name:** sales

**Enter an integer to specify type of computer:**

1 -> MCR-3332  
2 -> StarServer S  
3 -> 386-25  
4 -> 386-33  
5 -> SPARCstation 10/51  
6 -> SPARCstation 10/512  
7 -> SPARCstation 5/110  
8 -> SPARCstation 20/61  
9 -> SPARCstation 20/612  
10 -> SPARCstation 20/712

**Enter choice:**

- Enter the customer name.
- Enter the type of computer.
Enter choice: 7
SPARCstation 5/110 computer

If you ever decide that you entered incorrect data, wait until receiving the next prompt for more data, and then enter a negative number. This will cause the previous prompt to be repeated, and you can then enter the corrected data.

Enter number of ACD's (1-4): 1
1 ACD(s).

Note: when entering more than 1 input item, the items should be separated with white space (spaces or tabs). do NOT use a semicolon or a comma as a separator.

The next few questions ask how many entities will be in various types of realtime reports. For each type of report, your answer should be based on the most common report, or perhaps on the most important report.

Enter # of agents/split and trunks/trunk-group:

- Enter number of ACDs
- Enter the number of agents per split and the number of trunks per trunkgroup.

NOTE: Do not add punctuation between values.
UDN report, and # of UDN’s per UDN skill preference report: 10
10 vectors per vector report.
10 UDN’s per UDN report, 10 UDN’s per UDN skill preference report.

The next few questions must be answered for EACH ACD:

For ACD 0, answer the following questions:

vectoring enabled? (y or n): y
vectoring enabled.

Enter archiving interval, in minutes (15, 30, or 60): 30
Archiving interval: 30 minutes.
Occupancy due to interval archiving is 0.0134.
(2.2% of engineered capacity).

Will any of the following features be used:
(a) AMS (agents in multiple splits), without EAS,
(b) G2.2 EAS, or
(c) G3U4 with Expected Wait Time, rolling Average Speed of
   Answer, ii-digits, and ANI?
(y or n):

• Enter number of VDNs per VDN skill preference report.

• Answer the yes/no to vectoring enabled.

• Enter the CMS interval.

• Enter yes/no to additional features.
simple calls.

exceptions enabled? (y or n): y
exceptions enabled.

The following two questions concern call history. If call history is enabled on more than one ACD, it must be either external or internal on all ACD’s which have call history enabled. Having internal call history enabled on one ACD, and external call history enabled on another ACD is not allowed.

internal call history enabled? (y or n): n
internal call history disabled.

external call history enabled? (y or n): n
external call history disabled.

Maximum recommended call rate over a 9.6 kb/s link: 32000 c/h
(for the simplest possible calls, max recommended is 48000 c/h)

Maximum recommended call rate over a 19.2 kb/s link: 64000 c/h
(for the simplest possible calls, max recommended is 96000 c/h)

Enter call rate, in calls/hr: _

- Enter yes/no if exceptions enabled.
- Enter yes/no if internal call history enabled.
- Enter yes/no if external call history enabled.
- Enter the call rate.
Enter call rate, in calls/hr: 1000
call rate: 1000 calls/hr.
occupancy due to call processing: 0.008
(1.3% of engineered capacity).

agent trace enabled? (y or n): n
agent trace disabled.

That’s all of the ACD-specific questions. The remaining questions are system-wide.

enter number of terminals simultaneously logged in to CMS
(dumb terminals and PC terminal emulator (PC/TE) sessions): 1
1 dumb terminals and PC/TE’s logged in to CMS.

enter number of COW sessions simultaneously logged in to CMS: 0
0 COW sessions logged in to CMS.

a minimum of 2 logged-in terminals or COW sessions will be assumed.

Enter number of historical plus forecasting reports that will be run per hour (during the day):

- Answer yes/no if agent trace is active.
- Enter number of terminals simultaneously logged in to CMS.
- Enter number of COW sessions simultaneously logged in to CMS.
- Enter number of historical and forecasting reports that will be run per hour during the day.
Enter number of historical plus forecasting reports that will be run per hour (during the day): 1
1 historical plus forecasting reports running per hour.
occupancy due to hist and/or forecasting reports: 0.003
(0.4% of engineered capacity).
occupancy left for realtime reports: 0.485
(80.9% of engineered capacity).

You now have a choice to make. You can enter the total number of realtime reports to be run simultaneously, in which case you will be given a different refresh period for each of the 15 reports. Alternatively, you can enter the number of reports of each type that will be running simultaneously, in which case you will be given a single refresh period to use for all of the reports.

Enter 1 to get different periods,
2 to get a single period. Enter choice: 1
different periods requested.

Enter average number of realtime reports running per session: _

- Enter the number of historical reports that are active.
- Enter 1 for period choice.
- Add 4 to the to the average number of running realtime reports for the split data installation of WDS software and enter the total.
  OR
- Add 8 to the to the average number of running realtime reports for the split data installation of WDS software with the historical feature turned on and enter the total.
  OR
- Add 8 to the to the average number of running realtime reports for the VDN data installation of WDS software and enter the total.
  OR
- Add 16 to the to the average number of running realtime reports for the VDN data installation of WDS software with the historical feature turned on and enter the total.
Determining Refresh Rates for the WDS

Minimum periods for the realtime reports are as follows:

- 2 seconds for the split report.
- 2 seconds for the split status report.
- 1 seconds for the split call profile report.
- 1 seconds for the agent report.
- 1 seconds for the group report.
- 1 seconds for the queue/agent status report.
- 1 seconds for the queue/agent summary report.
- 1 seconds for the trunk group report.
- 1 seconds for the event count summary report.
- 3 seconds for the multi-ACD report.
- 1 seconds for the graph split report.
- 2 seconds for the graph queue report.
- 1 seconds for the graph split call profile report.
- 1 seconds for the graph vdn call profile report.
- 1 seconds for the vector report.
- 2 seconds for the vdn report.
- 1 seconds for the vdn call profile report.
- 1 seconds for the vdn skill preference report.

Hit return when ready to continue:

- Use the refresh rate for split report as the recommended refresh rate for the WDS software for split data installations.
- Use the refresh rate for VDN report as the recommended refresh rate for the WDS software for VDN data installations.

Printing Output From the Real-time Refresh Program

Print the refresh rate output with the following command:

```
# lp refresh
or
# lp r.<customer name>
```

**NOTE:** To print output, you must still be in the UNIX directory you were in when you ran the program.
Recommended WDS Configuration and Refresh Rate

Refresh Rate
Ten seconds (10 sec.) is the minimum refresh rate suggested for the WDS software. If a shorter interval is desired, it is recommended that the performance tool described in section A-2 is run to determine what the refresh rate should be.

Performance Impact
The performance impact to the CMS of the WDS software is equivalent of running two real-time custom reports.
General Information

This section expands upon the information about the Help Subsystem covered in previous chapters.

This appendix details:

- Accessing the Help Subsystem
- Sizing the Help Subsystem
- Navigating the Help Screens
Accessing the Help Subsystem

The function key “F1” on all screens of the WDS, provides access to the Help Subsystem. There are two levels of help, “Field Help” and “Screen Help”. When “F1” is pressed, the users enters Field Help by default. Pressing “F1” a second time, moves the user into Screen Help. Field Help is available for all fields and menu items. Screen Help is available for all screens.

Field Help

Pressing the Help SLK (F1) from any screen and cursor position opens “Field Help” for the field the cursor is positioned on. To close “Field Help” press enter/return or the esc key twice.

Note: To move from “Field Help for field A” to “Field Help for field B”, the user must close Field Help A and return to the screen they were working in prior to entering Field Help A. Then move the cursor to field B and press “F1”. The user is now in Field Help B.

Screen Help

Pressing the Help SLK (F1) twice from any screen or once if in “Field Help” moves the user into “Screen Help” for the current screen. To close “Screen Help” and return to “Field Help” press enter/return or the esc key twice.

Note: To move from “Screen Help for screen A” to “Screen Help for screen B”, the user must return to screen A. Then, exit screen A and enter screen B. Press “F1” twice. The user is now in Screen Help B.
Sizing the Help Subsystem

The Field Help and Screen Help windows can be sized to full screen by pressing $\text{ctrl} + p$ (figure C-1). To shrink the help window back down press $\text{ctrl} + p$ (figure C-2).

### Figure C-1: Help Subsystem (full screen size)

From the Wallboard Administration subsystem, you can do any of the following:

- Send a message to a wallboard or wallboards. Stop a message to a wallboard or wallboards. Store messages for display at later times. Delete stored messages.
- Configure one or more wallboards (MAX 32) to display ACD data. Set thresholds for the items to be displayed for color change on violations. Change the method the ACD data is displayed on the wallboard(s).
- Start and stop the wallboards.

Press the $\langle \text{ENTER} \rangle$ key or $\langle \text{ESC} \rangle$ key to exit help and continue

### Figure C-2: Help Subsystem (normal screen size)

From the Wallboard Administration subsystem, you can do any of the following:

Press the $\langle \text{ENTER} \rangle$ key or $\langle \text{ESC} \rangle$ key to exit help and continue

---

On-Line Help Subsystem B-3
Moving in the Help Screens

If there is more information than the help screen can display, the **Up Arrow** and **Down Arrow** allow the user to scroll through the information. The Down Arrow moves the cursor down one line per depression. The Up Arrow moves the cursor up one line per depression. Or, the user can hold down either arrow key to move multiple lines in the direction of the depressed arrow.
General Information

This section presents a flowchart to assist in the diagnosis and resolution of commonly encountered problems in the Wallboard Display System.

The process to reset a single wallboard port is also covered in this appendix.

This appendix assumes some familiarity with UNIX on the part of the administrator and is not intended to replace qualified professional assistance.
Troubleshooting Flowchart

On the following page is a flowchart designed to assist the wallboard administrator to isolate and correct malfunctions in the Wallboard Display System.

Explanations for numbered entries will be found on the pages following the flowchart.
Flowchart Items Explained

1. “Software Running?” - To determine if the software is properly running, you will need to examine the running processes from the root shell level. To do this, you will need to run the following command from the root shell prompt (#):

```
# ps –ef | grep walld
```

You should get a response similar to this:

```
cms  659  657  0   Apr 12 ?        0:00 sh -c
    /cms/toolsbin/clint -u cms <.walld_v.inp
.cms  657     1  0   Apr 12 ?        2:06 ./walld -b.
root 24476  8815  0 13:18:08 term/a   0:00 grep walld
```

(note – the first line is shown on two lines due to line length and may show as continuous on your display or be divided in a different manner)

There are several items of interest to us in the output. The first column is the user ID (UID) of the user that started the process, the second column is the process ID or PID, and the last item of interest to us is the last column, it describes the command that was run. **When the WDS is running properly, you will see that there are two related commands that are running. The `.walld -b. command and the sh -c /cms/toolsbin/clint command.** Both are essential to the proper operation of the WDS. If ever you see only one of those commands running without the other, you have a condition known as a hung process, correcting this will be described in item 5, “Stop Software”
2. “Start Software” – There are two methods to properly start the WDS software. The first is the method described in Chapter 7, where the software is started from the menu. This is the generally preferred method and should be used whenever possible. Another method to start the software is from the command line and is included here for ease of trouble shooting. Ensure that you are logged in as the proper UID for the WDS administrator and that you are in the WDS main directory (/export/home/pserv/walld is correct in most cases.) Execute the command: 

$ ./startwalld

After a short pause, the prompt should return and the software should be running (refer to item 1 to ensure that it is.)

3. “Logged in as correct User?” – It is the recommended practice that there be a single User ID for the administration of the WDS software. Multiple users accessing the software at the same time may cause difficulties to arise in the operation of the software. Certain users will have limited resources that will affect the operation of the software as well. For the purpose of troubleshooting, ensure that no other users are attempting to use the WDS, and that the UID you are using to start and stop the software is that which has been approved by your organization as the WDS administrator. You may use the CMS User ID, but that may not recreate conditions that arise if another UID is routinely used for WDS administration.

4. “Re-enter” – At several stages during the trouble shooting, as conditions are eliminated, it will be necessary to re-start the flow chart process from the beginning.
5. “Stop Software” - In order to work from a common base line, it will be necessary to stop the software to return it to a known state. There are several methods available to stop the software and each method has certain advantages and drawbacks. The first method is to use the Stop/Start entry from the WDS menu. It is simple to use, but under certain circumstances, may not work. The second method available is to execute the shell command:

```
$ /export/home/pserv/walld/stopwalld
```

Notice that this command is issued from the WDS administrator user ID prompt, NOT the root shell prompt. This method is slightly more difficult, and works under the same conditions as the menu access method, but without having to leave the shell environment. The final method of stopping the software involves using the process table method as described in item 1, (# ps -ef|grep walld) to determine the Process ID of the wallboard software. After running the command as the root user, locate the PID’s of all processes that are related to wallboards and run the following command, again from the root shell prompt (#):

```
# kill -9 657 659
```

(note: I have used the PID’s from the command output listed in item 1 for example only)

It is of the utmost importance that the PID’s be entered exactly as found in the output of the grep command. Typo’s or other errors could lead to the termination of system critical processes and damage to the CMS system as a whole.

This method of halting the software will always work, regardless of original process owner, or other factors that prevent the first two described methods from successful execution. It is also the method that opens the possibility of severe system damage in the event of an error. Because of this possibility, it is the least preferred method except for experienced system administrators.
6. “Run testrpt script” – The software as installed, includes several trouble shooting tools. The first is the testrpt script. **This script, when run, simulates the WDS software accessing the CMS to retrieve data.** In order for this tool to work properly, it must be run from the WDS directory, (/export/home/pserv/walld) and as the WDS administrator UID. Once these conditions are met, execute the command:

```
$ ./testrpt
```

This will launch the script and produce an output similar to the example on the following page. Once you have the output on the screen, press the delete key to terminate the script, if not, it will run again after a short pause. The script will read the configuration files and then pass the information on to the CMS to gather the correct data. In the example output, you will see that the last two lines of text read “exit successful.” This is your indication that the CMS and the WDS software are working together properly. If you should see “exit failed” then there should also be a brief explanation of the failure in the text output. These error messages are vital to the correction of the software and should be noted for referral at later steps in the trouble shooting process.

7. “Correct errors” – Once you have determined that there are errors in the configuration files, it will be necessary to correct them. Experienced administrators may be familiar with the error codes to an extent such that they may make the corrections themselves, but due to the large number of variations of configurations and possible messages, it is beyond the scope of this document to go into significant detail here. Therefore, WDS administrators are strongly encouraged to contact Lucent Technologies PSO as outlined on page 1-3 to make the required corrections and continue with the trouble shooting.
Wallboard has been configured to use SPLIT mode.
Running command:
   "/cms/toolsbin/clint -u cms <.walld_s.inp"
Press <return> or <enter> to begin report Running as user: cms

<table>
<thead>
<tr>
<th>MainMenu</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Reports&gt;</td>
</tr>
<tr>
<td>1 Dictionary&gt;</td>
</tr>
<tr>
<td>2 Exceptions&gt;</td>
</tr>
<tr>
<td>3 ACD Administration&gt;</td>
</tr>
<tr>
<td>4 Custom Reports&gt;</td>
</tr>
<tr>
<td>5 User Permissions&gt;</td>
</tr>
<tr>
<td>6 System Setup&gt;</td>
</tr>
<tr>
<td>7 Maintenance&gt;</td>
</tr>
</tbody>
</table>
> (0) [Custom Reports: Real-Time: walld_s Input]   acd=Example_ACD1
Splits:
ACD Number or Range 1
Refresh rate in seconds: 18

+Run, Exit
{}

> > > (0) [Custom Reports: Real-Time: walld_s Input]   acd=Example_ACD1
Splits: 1
ACD Number or Range 1
Refresh rate in seconds: 10

+Run, Exit
{}

(1) [Custom Reports: Real-Time: walld_s]   acd=Example_ACD1
  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0
  0  0  0  0  0  0  0  0  0  0  0  0  0  0

+Exit
{ Successful }

- Example output of testrpt script -

Troubleshooting C-7
8. "Aurora/SAI hardware in use?" - Once configuration errors have been ruled out, it becomes necessary to determine the hardware involved before proceeding to the next appropriate step. To keep this document as easy to use as possible, hardware options have been kept simple. Your particular installation may have both local serial ports (SAI or Aurora) and networked serial ports (Network Terminal Server or NTS) but only installations with just networked serial ports can be considered for further administrator trouble shooting.

To determine if you have local serial port extensions (SAI/P or Aurora cards) in use by the WDS software, it will be necessary to examine your current setup file. The easiest method for this is to enter into the "change wallboard configuration" menu item from the WDS main menu. Once there, scan through the active configurations for an entry in the 'serial TTY device' that is of the /dev/term/XXXX format, where XXXX is a specific port such as ‘a001’ or ‘07’. If any such entry exists, then your installation is using local serial port extensions, and no further trouble shooting is feasible at the end user level.

9. "Call PSO" – The scope of this document is not to diagnose and correct every possible issue, but rather to increase the efficiency and speed of repair, and to reduce costs incurred for maintenance. At several points in this flowchart, the limit of reasonable customer action is reached and the WDS administrator is strongly encouraged to follow the contact procedure outlined on page 1-3.
10. “All NTS’s responding?” – Network Terminal Servers (NTS) are a network device and as such are susceptible to failure at a number of different points. To eliminate a network or hardware failure, it will be necessary to establish that all NTS that are in use by the WDS software, are in fact, communicating properly with the CMS at the operating system level. To accomplish this, you will need to examine the setup file to determine the devices in use. The easiest method for this is to enter into the “change wallboard configuration” menu item from the WDS main menu. Once there, scan through the active configurations for an entry in the ‘serial TTY device’ that is of the /dev/s_pdevXXX format, where XXX is a specific device and port, such as ‘101’ or ‘208’. For each such entry that exists, you will need to annotate the associated three digit number, until you have a list of all devices and ports in use. Once this is done, you will need to exit the menu system and from a user shell, execute the command:

```bash
$ na
```

You will then be placed in the command line interface of the NTS administration program. The command to enter at the ‘command:’ prompt is `annex cmstermX`, where X is the numerical designation of the NTS device.

Included below is a sample session where the first NTS, cmsterm1, responds and the second (cmsterm2) does not. Each device (do not include ports at this time,) in use by the WDS software must respond to this test for proper operation.

```
$ na
Annex network administrator R14.1 October 22nd, 1997
command:
 command: annex cmsterm1
cmsterm1: Annex-3-UX R10.0, 64 async, 1 printer ports
 command: annex cmsterm2
cmsterm2: Not responding
Warning: cmsterm2 has been dropped from the list
annex list was empty - ignored
 command: quit
$

- Example output of na session -
11. **“Network/Hardware”** – If any one of the NTS hardware in use by the WDS software does not respond to the na application as outlined in item 10, then there is some difficulty at the hardware or network level. The CMS helpline and your own IT or network administration departments are the best resources available to resolve this issue.

12. **“Has fixport script run?”** – If you have already run the fixport script as outlined in the following section, then no further trouble shooting is feasible at the end user level.

13. **“Run fixport script”** – See ‘Reset Wallboard Port’ in the next section for details.
Troubleshooting C-11

Reset Wallboard Port

Occasionally, a terminal server port locks-up and no longer works with the wallboard software. When this occurs the terminal server options can be reset as follows:

- login as root

- type `cd /$HOME` where $HOME is the directory path where the WDS software is installed.

- type `.//fixport`

The software will prompt for the terminal server number and the associated port number to be reset. The Reset Wallboard Port menu item will:

- Stop the wallboard queue display.
- Kill the rtelnet running on the port.
- Reset the port options.
- Restart the rtelnet on the port.
- Restart the wallboard queue display.

The following example shows the screens and what needs to be entered to reset port number 1 on terminal server number 1.

This program will reset a terminal server port whose configuration has been corrupted.

**NOTICE:** This program should be used with caution; ensure you have the proper terminal server and port number before proceeding!

This program will first ask you for the terminal server number and the port number on the terminal server that you want to reset. The program will then stop the wallboard queue display. Kill the rtelnet, reset all port parameters, restart the rtelnet on the port, and then restart the Wallboard Queue Display.
Do you want to continue? ['y' or 'n']

type y <enter/return>

Stopping the Wallboard Queue display, please wait...

Enter the terminal server number to be reset, [default 1]:

type 1 <enter/return>

Enter the port on terminal server ${SERVER} to be reset, [default 1]:

type 01 <enter/return>

Resetting Terminal Server 1, port 1, /dev/s_pdev101
killing old rtelnet, pid NNNN  (Where: NNNN = a number)
Restarting rtelnet
Restarting Wallboard Queue Display