



Cisco Videoscape Voyager Vantage
Client Release 3.0
Release Note

Please Read

Important

Please read this entire guide. If this guide provides installation or operation instructions, give particular attention to all safety statements included in this guide.

Notices

Trademark Acknowledgments

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. A listing of Cisco's trademarks can be found at www.cisco.com/go/trademarks.

MoCA is a trademark of the Multimedia over Coax Alliance.

Other third party trademarks mentioned are the property of their respective owners.

The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1009R)

Open Source GNU GPL Statement

Cisco® Videoscape Voyager Vantage (Vantage) contain(s), in part, certain free/open source software ("Free Software") under licenses which generally make the source code available for free copy, modification, and redistribution. Examples of such licenses include all the licenses sponsored by the Free Software Foundation (e.g. GNU General Public License (GPL), GNU Lesser General Public License (LGPL), Berkeley Software Distribution (BSD), the MIT licenses and different versions of the Mozilla and Apache licenses). To find additional information regarding the Free Software, including a copy of the applicable license and related information, please go to: (i) for North America

http://www.cisco.com/web/consumer/support/open_source.html, or (ii) for outside North America

http://www.cisco.com/web/consumer/support/open_source.html#~international.

Once at the site, search for the product listing and click on the related items identified. If you have any questions or problems accessing any of the links, please contact: spvtg-external-opensource-requests@cisco.com.

Publication Disclaimer

Cisco Systems, Inc. assumes no responsibility for errors or omissions that may appear in this publication. We reserve the right to change this publication at any time without notice. This document is not to be construed as conferring by implication, estoppel, or otherwise any license or right under any copyright or patent, whether or not the use of any information in this document employs an invention claimed in any existing or later issued patent.

Copyright

© 2012 Cisco and/or its affiliates. All rights reserved. Printed in the United States of America.

Information in this publication is subject to change without notice. No part of this publication may be reproduced or transmitted in any form, by photocopy, microfilm, xerography, or any other means, or incorporated into any information retrieval system, electronic or mechanical, for any purpose, without the express permission of Cisco Systems, Inc.

Contents

About This Guide	v
Chapter 1 Vantage 3.0 Highlights	1
Web Services (W3C Compliant) User Interface	2
Object (Application, Theme, Log, Language) Download Support	4
Whole Home PVR	5
Remote PVR Scheduling Client APIs	6
PVR Advanced Features	7
Diagnostic Screens	8
Enhanced Channel Maps	9
Gray-out Unauthorized Channels	10
English and French Language Support	11
Easy-Migrate (Settings and Recordings)	12
Integrated VOD User Interface	13
Screen and Clean	14
Supporting Documents	15
Chapter 2 System Resources	17
System Software Elements and Delivery Media	18
Set-Tops Supported	19
Chapter 3 Issue Tracking	21
Search for All Bugs in This Release	22
Search for a Specific Bug	23
Search for Bugs Using Specific Criteria	24
Appendix A Screen and Clean	27
User Interaction	28
Steps to Activate	29
For Information	30

About This Guide

Introduction

Cisco Videoscape Voyager Vantage (Vantage) 3.0 is designed as an update and enhancement to the traditional resident application for the Explorer® 864x and 464x series set-tops. This release note contains the following information:

- Descriptions of the new standard and optional features introduced with this release
- Information you need to prepare your site for an upgrade to Vantage 3.0
- General information on contacting us
- A list of software versions installed with the base Vantage 3.0 release

Audience

This release note is written for system operators, sales and program managers, and field technicians.

Document Version

This is the first formal release of this document.

1

Vantage 3.0 Highlights

Introduction

The Cisco Vantage Client User Interface (UI) is the on-screen interface of your set-top that you use to navigate, control, and interact with your cable TV (CATV) service.

The user interface and your set-top bring a rich, new set of interactive services directly to you.

The Cisco Vantage allows you to provide next-generation interactive features to your customers that they can access directly through a set-top. The browser-based, on-screen interface of Vantage helps you put the user firmly in charge of their TV viewing experience.

This section describes the new features available with this release.

In This Chapter

■ Web Services (W3C Compliant) User Interface.....	2
■ Object (Application, Theme, Log, Language) Download Support.....	4
■ Whole Home PVR.....	5
■ Remote PVR Scheduling Client APIs.....	6
■ PVR Advanced Features	7
■ Diagnostic Screens	8
■ Enhanced Channel Maps	9
■ Gray-out Unauthorized Channels	10
■ English and French Language Support	11
■ Easy-Migrate (Settings and Recordings)	12
■ Integrated VOD User Interface	13
■ Screen and Clean.....	14
■ Supporting Documents	15

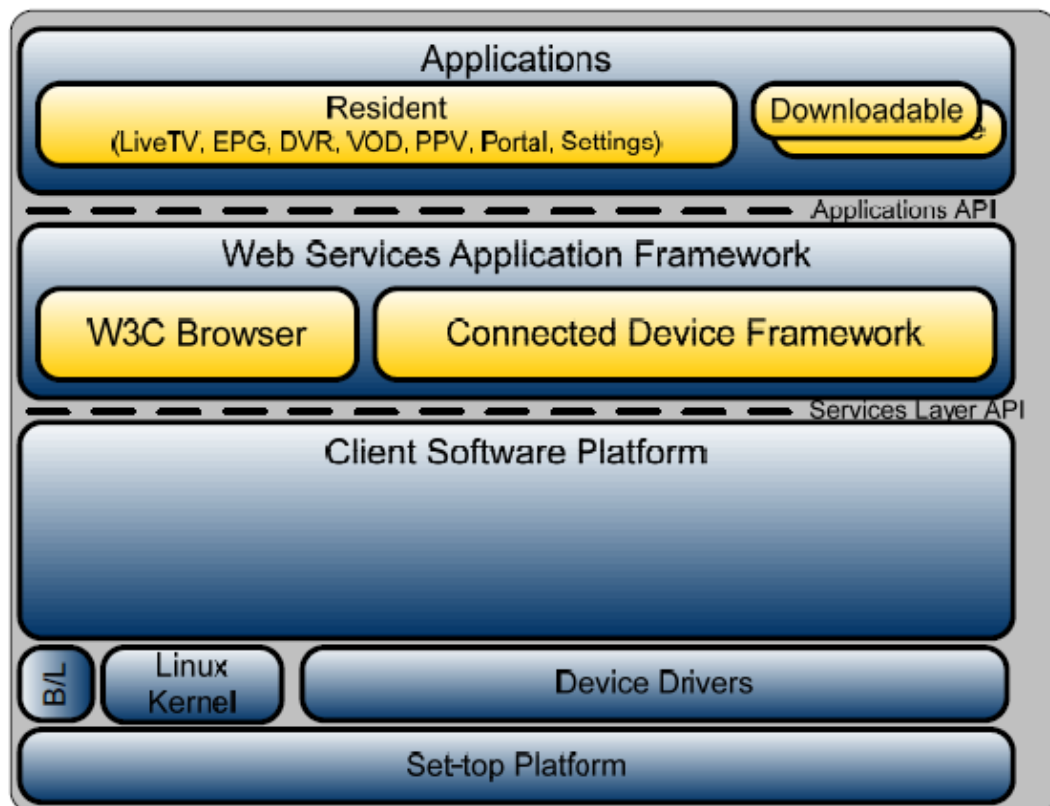
Web Services (W3C Compliant) User Interface

Vantage is a browser-based application framework. Vantage for Cable leverages the latest W3C standards to enable a high degree of customization in UI design. Vantage for Cable also allows for personalization of the experience at the consumer level while maintaining key elements of the service provider branded experience.

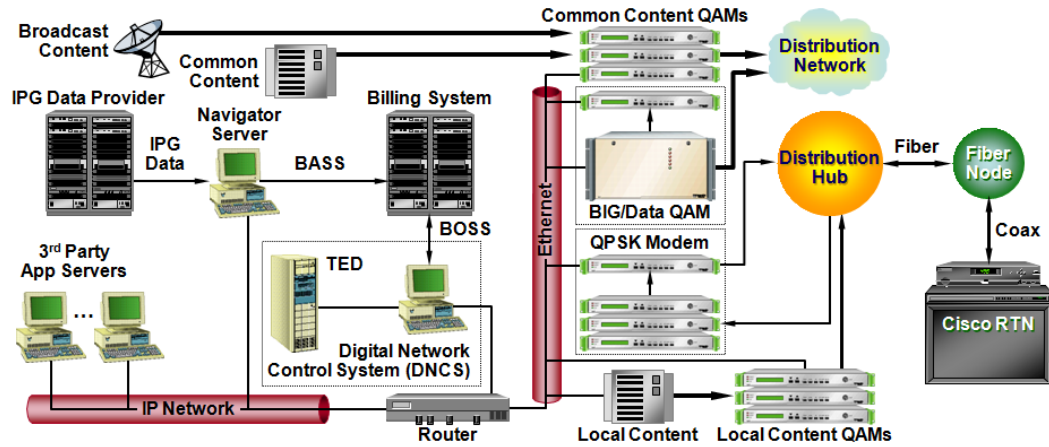
As an example, the consumer can customize their individual experience to get access to the content and applications that matter most to them. This advanced next-generation client delivers a rich and industry-leading consumer navigation and applications experience.

In this emerging environment of increasing service velocity, time-to-market for new services is crucial. With today's technologies, applications can take many months to launch in the digital television environment. Vantage for Cable enables service providers to condense development and deployment timeframes for new services to a fraction of traditional time by leveraging W3C technologies and the nearly unlimited pool of web development resources world-wide.

By leveraging a W3C compliant embedded browser architecture (shown below), Vantage for Cable allows for highly extendable, customizable, and easily deployable applications and consumer experiences.



Vantage for Cable platform utilizes the same back-end server infrastructure to support the SARA client platform (e.g. DNCS, TED, QAM, etc.). The new client code can be downloaded to select set-top platforms just as a new SARA code image would be downloaded (via CVT download to the set-top box), thereby providing operational readiness and no need for re-training and adopting an entirely new back-end system.



Applications Included in the User Interface

The following core television watching applications are included in the baseline UI:

- Guide (EPG)
- Menu
- Settings
- Zapper/Infobanner
- Parental Controls
- PPV
- Caller ID Notification Message
- PVR
- VOD
- PIP/POP
- Whole Home PVR

For detailed information, refer to *Cisco Videoscape Voyager Vantage Client User Interface User Guide* (part number OL-26393-01).

Object (Application, Theme, Log, Language) Download Support

The Object Download feature of Vantage 3.0 provides a means for applications, themes, logos, and language packs (objects) to be downloaded to the set-top box (STB) using the DNCS-hosted broadcast file system (BFS), or an HTTP, web-hosted Application Store “Walled Garden.”

The following objects are downloadable and can be provisioned on the Vantage Web Services platform:

- Application – downloadable widget-style tool, such as a weather widget, stock ticker, or an email reader
- Theme – a customized look-and-feel to brand the UI with colors and images
- Language Pack – package to download a new language set into the UI
- Walled Garden – a network-hosted portal application, such as a News Portal, Games Portal, or Self-Service Provisioning Portal

For detailed information, refer to *Configuring Downloadable Objects for Cisco Videoscape Voyager Vantage* (part number OL-26414).

Whole Home PVR

Vantage 3.0 features whole home PVR. Whole home PVR provides PVR-like functionality to diskless (non-PVR) devices within the home network, allowing users to view all content from any PVR in the home on any client device in the home. Whole home PVR capability allows users to browse a unified list of all recordings on all devices within the home and stream a program from any PVR to any STB in the home. Users can perform trick-plays (for example, Fast Forward, Rewind, Skip, Back), pause or stop a recorded program in one room and resume it in another, and manage and schedule recordings just as if they were sitting at one of the home PVRs.

For detailed information, refer to the *Cisco Videoscape Voyager Vantage Configuration Guide* (part number OL-26411).

User Interface Improvements

Vantage 3.0 provides the following client UI improvements to support whole home PVR:

- The main menu on PVR and non-PVR devices will show a "Recorded TV" menu that allows subscribers to access their recordings from all PVRs in the home, schedule recordings, or add new recordings, as if they were using a PVR set-top.
Note: Whole home PVR and PVR are package authorized services.
- Client devices that have whole home PVR enabled via conditional access package authorization will allow subscribers to access a unified list of all recordings from all PVRs in the home.
- Client devices that do *not* have whole home PVR enabled will not display the Recorded TV menu.
- Parental controls of the PVR content and list are enforced based on the settings of the client device.
- Subscribers can pause viewing in one room and resume viewing in another.
- Subscribers can simultaneously record two programs, watch two recording programs (via PIP/POP), and stream three programs.

Important: Refer to the *MoCA Installation and Troubleshooting Reference Guide* (part number 4031235) for MoCA installation instructions.

Remote PVR Scheduling Client APIs

Vantage 3.0 provides a Remote PVR interface using Cisco Passthru messaging and HTTP messaging. The Remote PVR interface is used by PVR Scheduling and PVR Management applications that are running on a remote device but wish to browse or modify PVR assets (recordings) on a PVR set-top device.

The Vantage Remote PVR protocol offers many benefits:

- Highly compressed binary format is optimal for low bandwidth networks
- PVR Application Server uses MAC address for set-top identification and does not need to be aware of IP addressing
- The protocol is highly scalable and allows optimal use of network connections
- NAT is resolved by the DNCS
- The Program Guide is available directly from industry recognized data providers
- Works in DNCS and Regional Network Control System (RNCS) environments

The flexibility of the protocol allows for different human factors on the end-user devices and the design is dependent upon third party back-end developers who want to utilize the client interface definitions to provide remote PVR applications. Contact your Cisco account manager to obtain the Remote PVR interface specifications or to inquire about current ecosystem partners offering Remote PVR applications which interface with the Cisco Vantage platform.

PVR Advanced Features

Vantage 3.0 provides the following advanced PVR features:

- Prioritizer mode for prioritizing series recordings, so your PVR never misses recording your most important series.
- Padding on PVR recordings, so you no longer have to worry about missing your favorite football team's big win in overtime.
- Folders for grouping like-titled PVR recordings and scheduled recordings into folders for easy access and a clean UI.
- The ability to add another level of parental controls by "locking down" a recorded or scheduled program, independent of the parental control rules.
- Multiple sort orders in the "My Recordings" list and "Scheduled Recordings" list including: "By Title", "By Date", "By Channel", "By Series", and "By PVR".
Note: The "By PVR" option appears only if the whole home PVR feature is enabled.
- Automatic skip-correction when fast-forwarding or rewinding programs or live TV, which automatically compensates for the natural delay between trick modes and pressing play.
- Support for eSATA external storage devices into a compatible PVR.

Diagnostic Screens

Providing customer support for any product or technology can be stressful. Customers want answers NOW! We understand the need for providing quick and accurate responses to network users, and we strive to provide tools to make this task easier. The diagnostic screens for Vantage set-tops are a quick way that you can monitor and diagnose performance relative to the system.

Diagnostic screens have been optimized to utilize a menu-driven system for more organized and faster access to the data you need to troubleshoot problems.

The screenshot displays a diagnostic menu with the following components:

- Menu Item:** Summary (highlighted in blue)
- Page Name:** Page 1 of 2: Summary Information
- Main Menu:** MAIN MENU
- Menu Item with Subsections:** Mfr. Diags..., + CableCARD Info, DVR Information, Home Networking, Reboot STB...
- Menu Item with Action Required:** Reboot STB...
- Field Name:** OOB Mode, OOB Network FDC Freq, FDC RF Quality (PWR, SNR), OOB Network RDC Freq, OOB Network RDC PWR, OOB IP
- Field Data:** DSG, 579.000 MHz, 5.5 dBmV, 36.8 dB, 30.000 MHz, 33.2 dBmV, 192.168.124.66
- System Time:** 15:52:41
- Page Instructions:** Press [Right / Left] for Next / Previous Page, Press [Up / Down] for Next / Previous Menu Category

For detailed information and instructions for accessing and using the Vantage diagnostic screens, refer to *Understanding Diagnostic Screens for Cisco Videoscape Voyager Vantage Implementation Design Guide* (part number OL-26413-01).

Enhanced Channel Maps

Channel maps can now be assigned based on the following criteria:

- PowerKEY® package authorization or Entitlement ID (EID)
- DHCT hardware model
- DHCT hardware version
- Physical hub assignment, virtual hub assignment, or bouquet assignment
- MAC address

For detailed information, refer to *Configuring Enhanced Channel Maps for SARA in SR 3.8/4.3 and Later User Guide* (part number 4025032).

Gray-out Unauthorized Channels

This enhanced feature of the Vantage UI will display un-authorized channels in the user's program guide grid, but will display them with a different look so that they are aware they are unsubscribed to that channel.

English and French Language Support

English and French language packages are included with the Vantage code, by default. Using the Downloadable Objects feature, alternative other languages can be supported and downloaded to the set-top in the form of a new language library.

Easy-Migrate (Settings and Recordings)

All of your existing or applicable SARA settings and recordings will be migrated to Vantage-applicable settings and recordings. This ensures that users will not lose their set preferences, scheduled recordings lists, or recorded programs in the transition to this powerful new user interface.

Note: Reverse migration (Vantage-to-SARA) is not supported.

Integrated VOD User Interface

Unlike previous versions of Cisco set-top client software, no separate application or user experience is required for Video-On-Demand (VOD) browsing, searching, and viewing. Vantage has a VOD UI built in and is ready to accept catalog data and video streaming from many of the popular VOD providers in the market today. Contact your Cisco account representative for details on Vantage compatibility with your VOD vendor.

Screen and Clean

The screen and clean functionality allows the technician to perform clearing of NVM data on the set-top. Exercising this feature causes the full clearing, including removal of PPV persistent data and reformatting of the hard drive.

Note: Instructions on how to use this feature are provided in the appendix of this document.

Supporting Documents

Vantage-Specific Documents

The following documents are new or updated as part of Vantage 3.0:

- *Cisco Videoscape Voyager Vantage Client User Interface User Guide* (part number OL-26393-01)
- *SARA to Cisco Videoscape Voyager Vantage Migration Instructions* (part number OL-26410)
- *Cisco Videoscape Voyager Vantage Configuration Guide* (part number OL-26411)
- *Downloading and Installing the Cisco Videoscape Voyager Vantage Client Instructions* (part number OL-26412)
- *Configuring Downloadable Objects for Cisco Videoscape Voyager Vantage* (part number OL-26414)

Supporting Documents

The supporting documents for Vantage 3.0 are as follows:

- *Daylight Saving Time Configuration Guide for an RF Network* (part number 749233)
- *System Release 2.8.2/3.8.2/4.3.2 CD Upgrade Installation Guide* (part number 4038415)
- *Explorer Digital Home Communications Terminal Staging Guide* (part number 734375)
- *Explorer® Digital Home Communications Terminal Troubleshooting Guide* (part number 717867)
- *Staging Area Quick Reference Sheet* (part number 740230)
- *Enhancing Your Subscribers' Experience: SARA Configurable Options* (part number 4002178)
- *Best Practices for Using Single-Stream PowerKEY CableCARD Modules* (part number 4015091)
- *Enhanced Channel Maps User's Guide* (part number 4011413)
- *Configuring Enhanced Channel Maps for SARA in SR 3.8/4.3 and Later User Guide* (part number 4025032)
- *How Set-Tops Respond to Configuration Changes* (part number 4012369)
- *MoCA Installation and Troubleshooting Reference Guide* (part number 4031235)

Chapter 1 Vantage 3.0 Highlights

- *Cisco Explorer 8640HD, 8642HD, 8650HD, and 8652HD High-Definition DVR Set-Tops Quick Reference (part number 4026879)*
- *Cisco Explorer 8640HDC, 8642HDC, 8650HDC, and 8652HDC High-Definition Set-Tops with Multi-Stream CableCARD (M-Card) Interface Quick Reference (part number 4026878)*
- *Cisco Explorer 4642HD and 4652HD High-Definition Set-Tops Quick Reference (part number 4029078)*
- *Cisco Explorer 4642HDC and 4652HDC High-Definition Set-Tops with Multi-Stream CableCARD Interface Quick Reference (part number 4029076)*

2

System Resources

Introduction

This chapter provides information about the network elements used in testing this release and the set-tops supported by this release.

In This Chapter

- System Software Elements and Delivery Media 18
- Set-Tops Supported 19

System Software Elements and Delivery Media

The table below lists the network elements and software components used for testing Vantage 3.0.

SVT ENET Lab Component Configuration

Component	Version (Configuration)
DNCS	4.3.2.8
AppServer	3.6.2.0
Settop Res File	settop.v145
Midas	N/A
DCM	v07.05.75
QAM	v2.5.7
QPSK (MOD)	QPSK MOD G13
QPSK (DEMODO)	QPSK DEMODNEW G13
NetCrypt	v1.3.0
USRM	1.7.1
Seachange	5.0.0.129
Modern Theme Version	1.0.2.27.3
Classic Theme Version	1.4
Tier-3 Version	4.6.10.11 (List View)

Set-Tops Supported

Introduction

Vantage 3.0 supports the set-top models described in this section.

If you have questions about a particular model, contact your account representative.

Cisco Explorer 864x HD PVRs

The Cisco Explorer 864xHD PVRs provide high quality video, audio, PVR, and two-way capabilities that cable operators have come to expect. The platform provides faster processing of applications while also supporting bandwidth management objectives.

The 864xHD series PVRs become the multimedia service gateway for the home-sharing and managing video and audio experiences between the television and other home network devices. This home-sharing functionality is dependent upon appropriate software support.

Note: The Cisco Explorer 8642HD PVR offers Multimedia over Coax Alliance (MoCA™) technology that enables an IP LAN connection over coaxial cable, minimizing the need for new wiring in the home and enabling Multi-Room (Whole Home) PVR and other advanced home-sharing functionalities.

The Cisco Explorer 864xHD series PVRs offer the following features:

Network Utilization Enhancements

- 1 GHz Tuning allows service providers to expand network bandwidth to provide additional services such as HD and VOD, VoIP video, and high-speed data
- MPEG-4 (H.264) Decoding supports compression technology that provides better video quality at about half the data rate of MPEG-2
- Digital-Only Tuning enables service providers to improve bandwidth efficiency and accelerate the transition to an all-digital network by migrating analog subscribers to digital services

Vantage and Other Conventional Network Support

- Embedded PowerKEY Conditional Access provides digital security using an RSA encryption algorithm
- Vantage middleware with advanced web services application platform (optional software)

PVR and Home Networking Features

- Dual-tuner PVR allows one program to be recorded while viewing or recording another
- 160 GB Internal Hard Drive stores up to 90 hours of SD or 20 hours of HD programs
- 320 GB Internal Hard Drive (optional) stores up to 180 hours of SD or 40 hours of HD programs
- 500 GB Internal Hard Drive (optional) stores up to 280 hours of SD or 62 hours of HD programs
- Whole Home PVR enables sharing and managing of video services throughout the home to other connected set-tops
- MoCA Connection enables an IP LAN connection over coaxial cable which minimizes the need for new wiring in the home

Cisco Explorer 464xHD Series High-Definition Set-Tops

Power, flexibility, and advanced security features highlight the Cisco Explorer 464xHD series High-Definition Set-Tops. The 464xHD series set-tops support Vantage technology. The HD and SD outputs on these set-tops also support MPEG-4 (H.264) decoding.

In addition, the 4642HD set-tops offer MoCA technology that enables an IP LAN connection over coaxial cable, minimizing the need for new wiring in the home

Network Utilization Enhancements

- 1 GHz tuning enables cable operators to expand network bandwidth to provide additional services such as VOD and high-speed data
- MPEG-4 (H.264) decoding supports compression technology that provides better video quality at approximately half the data rate of MPEG-2

Vantage and Other Conventional Network Support

- PowerKEY Conditional Access System secures digital services using symmetric encryption algorithm for content protection
- Vantage middleware with advanced web services application platform (optional software)

Home Networking Features

MoCA connection enables an IP LAN connection over coax cable

3

Issue Tracking

Introduction

This chapter explains how to use the Bug Toolkit to view issues (bugs) in a release. The Bug Toolkit is an online tool that allows registered users to search for bugs by release or by a bug number.

In This Chapter

- Search for All Bugs in This Release 22
- Search for a Specific Bug 23
- Search for Bugs Using Specific Criteria 24

Search for All Bugs in This Release

Follow these instructions to search for all bugs in this release using the default search parameters for bug severity and status.

- 1 Go to http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl.
- 2 When prompted, log in with your user name and password. The Bug Toolkit page opens.
Note: If you have not set up an account on Cisco.com, click **Register Now** and follow the on-screen instructions to register.
- 3 To search for all the bugs in this release, enter the following search criteria in the **Search Bugs** tab:
 - Select Product Category: Select **Video and Content Delivery**.
 - Select Products: Select **Application Server**.
 - Software Version: Select **1.0** to view the list of bugs in this release.
- 4 Click **Search**. The Bug Toolkit displays the list of bugs for this release.

Search for a Specific Bug

- 1 Go to http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl.
- 2 When prompted, log in with your user name and password. The Bug Toolkit page opens.
Note: If you have not set up an account on Cisco.com, click **Register Now** and follow the on-screen instructions to register.
- 3 In the **Search for Bug ID** field, enter the ID of the bug you want to view and click **Go**. The Bug Toolkit displays information about the bug in the **Search Bugs** tab.

Search for Bugs Using Specific Criteria

Follow these instructions to use the following various search options to display specific bugs.

- 1 Go to http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl.
- 2 When prompted, log in with your user name and password. The Bug Toolkit page opens.
Note: If you have not set up an account on Cisco.com, click **Register Now** and follow the on-screen instructions to register.
- 3 To search for all the bugs in this release, enter the following search criteria in the **Search Bugs** tab:
 - Select Product Category: Select **Video and Content Delivery**.
 - Select Products: Select **Application Server**.
 - Software Version: Select the desired software version number.
 - Select Version Type: Select one of the following options:
 - **Known Affected Version (KAV):** the software version/release assumed to contain this bug
 - **Fixed-in:** the software version/release in which the bug has been fixed
 - **Found-in:** the software version/release in which the bug was first reported
 - Search for Keyword(s): Enter desired key words in this field. Separate search phrases with Boolean expressions (**AND**, **NOT**, **OR**) to search within the bug title and details.
 - Advanced Options: You can perform a search using the default search criteria, or define custom criteria for an advanced search. To customize the advanced search, select **Use custom settings for severity, status, and others** and provide the following information:
 - Severity –Select the severity level.
 - Status –Select any combination of **Terminated**, **Open**, or **Fixed**.
 - Select **Terminated** to view terminated bugs. To filter terminated bugs, clear the Terminated check box and select the appropriate sub-options that appear below the terminated check box. The sub-options are **Closed**, **Junked**, and **Unreproducible**.
 - Select **Open** to view all the open bugs. To filter the open bugs, clear the Open check box and select the appropriate sub-options that appear below the Open check box. The sub-options are **Assigned**, **Forwarded**, **Held**, **Information Required**, **More**, **New**, **Open**, **Postponed**, **Submitted**, and **Waiting**. Select multiple sub-options as required.

- Select **Fixed** to view fixed bugs. To filter fixed bugs, clear the Fixed check box and select the appropriate sub-options that appear below the fixed check box. The sub-options are **Resolved** and **Verified**.
 - Advanced – Select the **Show only bugs containing bug details** check box to view only those bugs that contain detailed information, such as symptoms and workarounds.
 - Modified Date – Select this option if you want to filter bugs by the date they were last modified.
 - Results Displayed Per Page – Select the appropriate option from the list to restrict the number of results that appear per page
- 4 Click **Search**. The Bug Toolkit displays the list of bugs for this release.

A

Screen and Clean

Introduction

This appendix provides instructions for performing the screen and clean function.

The screen and clean functionality allows the technician to perform clearing of NVM data on the set-top. Exercising this feature causes the full clearing, including removal of PPV persistent data and reformatting of the hard drive.

In This Appendix

- User Interaction..... 28
- Steps to Activate..... 29

User Interaction

While on the “Post and Boot Results” diagnostic page the user enters the clear NVM code using the remote. Once the code is entered, a second page appears, indicating that the factory defaults are being restored. A pop-up message appears to confirm that the operation is about to begin. The set-top then begins the screen and clean operation. Until the code is entered, the clearing functionality is completely hidden in the screens so that a user cannot see or navigate to any menus, pages or fields that relate to or hint at this activity, even empty items.

Steps to Activate

Complete the following steps to perform the screen and clean function.

Note: The set-top must be in brick mode for the diagnostics screen and clean to operate. (This is to prevent subscribers from accessing the clean and screen feature)

- 1 Enter the on-screen diagnostics and navigate to the menu item for **Post & Boot Results**.
- 2 Select **Post & Boot Results** and type the screen and clean access code (728469), which is the same 6-digit pin code SARA uses for resetting NVM.

A new menu item appears on the main screen at the bottom labeled "Screen and Clean". Focus automatically switches to this menu, as if user had navigated to it. The page shows the message "Restoring factory defaults".

For Information

If You Have Questions

If you have technical questions, call Cisco Services for assistance. Follow the menu options to speak with a service engineer.



Cisco Systems, Inc.
5030 Sugarloaf Parkway, Box 465447
Lawrenceville, GA 30042

678 277-1120
800 722-2009
www.cisco.com

This document includes various trademarks of Cisco Systems, Inc. Please see the Notices section of this document for a list of the Cisco Systems, Inc. trademarks used in this document.

Product and service availability are subject to change without notice.

© 2012 Cisco and/or its affiliates. All rights reserved.

March 2012 Printed in USA

Part Number OL-26409-01