These release notes describe the features and caveats for all Cisco Videoscape Distribution Suite Video Recording (VDS-VR) Release 4.1.3.

This release includes the following new features:

- Locate port resiliency
- Packet Capture support on data port
- Money Trace
- New tunables for Packet Capture and localization timeout

This release resolves some open caveats from the prior release. For a list of caveats that apply to this release, see Caveats, page 5.

### About Packet Capture

VDS-VR 4.1.3 supports the use of standard TCP/IP packet analyzers such as tcpdump and libpcap. A new CServer architecture allows for the capture and monitoring of its streaming and control data packets. This feature is enabled by setting /proc/calypso/internal/enable_packet_capture to any non-zero value.

Due to the extra packet processing involved, use of this feature may degrade network performance, and should be disabled when not needed. Because of its possible performance impact, this feature should not be used to troubleshoot systems running at or near the networking limits. In those cases, external packet monitoring methods should be used.

### About Money Trace

The Money Trace feature enables distributed tracing of nDVR activities that span across different platforms and systems. For this release, the recorder and Recorder Manager support tracing of the video playback session only. It allows a trace tree to be produced. In this case, the trace tree is rooted at the video player and encompasses an entire playback session.
The video player generates a globally unique identifier (GUID) as the trace ID. As a result, all interactions (including error scenarios) within the nDVR system should be traceable using the trace ID.

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Introduction

Cisco VDS-VR is a next-generation cloud DVR appliance that works together with Cisco Cloud Object Storage (COS) as well as third-party cloud storage products. VDS-VR embodies the program recording functions of Cisco Video Distribution Suite for Television (TV VDS), but provides new features and enhancements in response to customer requests.

In particular, VDS-VR Release 4.1.3 provides:

- Support for archival storage via Cisco COS
- Feature enhancements relative to previous Cisco TV VDS offerings
- Multiple bit rate (MBR) VOD ingest integration with COS
- Optional archiving to cloud storage using the OpenStack Swift API
- Use of Yellow Dog Updater Modified (YUM) for installation and upgrade
- SNMP MIBs for enhanced monitoring of VDS-VR statistics

Hardware Requirement

VDS-VR Release 4.1 was developed specifically to support the CDE 465 equipped with 6 TB hard drives (CDE 465-4R4). This support allows for DVR storage in a high capacity cloud. The VDS-VR 4.1.3 release also now supports the CDE 460.

Note

VDS-VR 4.1.3 does not support CDE 100, CDE 200, CDE 300, or CDE 470 hardware models.
Feature Enhancements

VDS-VR 4.1.3 provides the following enhancements over previous Cisco cloud DVR offerings:

- SNMP support for CDE 465
- Inclusion of Supermicro SuperDoctor 5 software
- Improved system management
- Redundancy and recovery capabilities
- Comcast R8 IO3 and IO4 support
- Comcast C2 video indexing IO4 (Version 2)
- Enhanced statistics monitoring
- Enhanced AVS database (AVSDB) data protection (see note below)
- Swift API support for COS archiving
- MBR Profiles alignment
- Cross-recording prevention
- HTTP ingest
- Orphaned Global Object ID (GOID) cleanup
- Support for Comcast C2 Indexing V2 specification, including:
  - Reduction of index file size
  - Reordering of index records
  - Update to Audio Header Records
  - Limiting Audio Index Records
  - HE-AAC Support
  - Removal of AVC B and P Frame Records
  - Update to AVC I Frame Record
  - Update to EBP Index Record
  - Update to AVC Normal Rate Random Access Picture Record
  - Variable Bit Rate (VBR) Record Flag
  - Implementation of AVC PPS, AVC SEI, and AVC Slide Header records
- Additional Program Map Table (PMT) Descriptor support, including
  - Audio Descriptor - High Efficiency Advanced Audio Coding (HE-AAC)
  - Maximum Bit Rate Descriptor - Provides hints to TV Recorder for resource allocation
  - Closed Caption (CC) Descriptor - Eliminates the need to parse AVC SEI for CC information
- CableLabs Encoder Boundary Point (EBP) Support
- Configuration changes to support new features and enhancements
Supported Environments

- Supports recording start times later than the current NTP time for interoperation with Cisco Recorder Manager
- Enhanced AVSDB automatic shutdown with configurable partition check for /arroyo/db and /arroyo/log
- Service start/stop script and process monitoring for live backup server
- Transaction log file reduction for live backup feature

Note: Due to the storage constraints of the database partition, Cisco recommends that VDS-VR servers used as backup servers handle backup for only a single client.

Unsupported Features

The following planned features are not yet implemented in VDS-VR 4.1.3:

- CDSM GUI support for CDE 465 model hardware
- Support for red LED SAS/SATA drive failure LED indicators
- Support for PMT Change
- Support for CableLabs AAC Audio Descriptor

Note: Although the CDE 465 system is equipped with two hot-swappable system disks, Cisco does not recommend unplugging either of these drives during normal operation.

Supported Environments

VDS-VR 4.1.3 supports RTSP environments. Some RTSP environment features only apply to certain RTSP deployment types.

System Requirements

VDS-VR 4.1.3 supports the Cisco CDE 465 hardware equipped with 6 TB hard drives (CDE 465-4R4), and the Cisco CDE460 hardware.

For additional information, see the following:

- Cisco Content Delivery Engine 465 Hardware Installation Guide
- Cisco Content Delivery Engine 205/220/250/420/460/470 Hardware Installation Guide

Note: VDS-VR 4.1.3 does not support CDE 100, CDE 200, CDE 300, or CDE 470 hardware models.

VDS-VR 4.1.3 was tested with Recorder Manager 4.0.0 versions up to usrm-4.0.0-308.el6.x86_64.
Caveats

Caveats describe unexpected behavior in Cisco VDS-VR software releases. Severity 1 caveats are the most serious caveats; severity 2 caveats are less serious. Severity 3 caveats are moderate caveats, and only selected severity 3 caveats are included in the caveats document.

Caveat numbers and brief descriptions for Cisco VDS-VR Release 4.1.3 are listed in this section.

Open Caveats

Open Caveats for Cisco VDS-VR Release 4.1.3

Table 1 lists the open issues in the VDS-VR 4.1.3 release.

Bug details are displayed in the Bug Search.

<table>
<thead>
<tr>
<th>Bug ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCuu38919</td>
<td>CDE465 error booting to DOS when using USB flash drives.</td>
</tr>
<tr>
<td></td>
<td><strong>Workaround:</strong> Bootable USB drives created with FreeDOS may not boot to the DOS prompt successfully. Bootable USB is normally used for BIOS or firmware updates on the CDE platforms as recommended via field notice. If a bootable USB drive you create does not boot DOS successfully, perform the update via IPMI.</td>
</tr>
<tr>
<td>CSCuv89886</td>
<td>Sometimes server going offline after statsd service started.</td>
</tr>
<tr>
<td></td>
<td><strong>Workaround:</strong> After cserver is up, run the following command to ensure that the server is in Online mode so that the Locate service can be enabled: <code>echo 0 &gt; /proc/calypso/tunables/offline</code></td>
</tr>
<tr>
<td></td>
<td>Next, confirm that the server is in Online mode by checking for these messages:</td>
</tr>
<tr>
<td></td>
<td>• [ 8921.085185] Available HTTP Locate Port on service address...</td>
</tr>
<tr>
<td></td>
<td>• [ 8939.870970] Primary HTTP Locate Port on service address...</td>
</tr>
<tr>
<td></td>
<td>Finally, to ensure that this issue does not recur at the next service restart, do one of the following as appropriate:</td>
</tr>
<tr>
<td></td>
<td>• If not using CDSM, comment out the “controller...” line in the file /home/isa/.arroyorc.</td>
</tr>
<tr>
<td></td>
<td>• If using CDSM, do not start the statsd service by default.</td>
</tr>
<tr>
<td>CSCuv96383</td>
<td>Livebackup server may deadlock when backup DB over 6GB under high stress.</td>
</tr>
<tr>
<td>CSCuv99744</td>
<td>4.1.3: Livebackup hit fatal region error and continuously flooding logs.</td>
</tr>
</tbody>
</table>

Resolved Caveats

Resolved Caveats Cisco VDS-VR Release 4.1.3

Table 2 lists the fixed issues in the VDS-VR 4.1.3 release.
Accessing the Bug Search Tool

This section explains how to use the Bug Search tool to search for a specific bug or to search for all bugs in a release.

**Step 1**
Go to [https://tools.cisco.com/bugsearch/](https://tools.cisco.com/bugsearch/).

**Step 2**
At the Log In screen, enter your registered Cisco.com username and password; then, click Log In. The Bug Search page opens.

**Note**

**Step 3**
To search for a specific bug, enter the bug ID in the Search For field, and press Enter.

**Step 4**
To search for bugs in the current release, specify the following criteria:

- Select the Model/SW Family Product Category drop-down list box, then enter Cisco Videoscape Distribution Suite for Television or select the name from the Select from list option.
- Select Cisco Videoscape Distribution Suite for Television from the list that displays.
- The VDS Television Software type displays in the Software Type drop-down list box.
- Releases: 4.1.3.
- Advanced Filter Options—Define custom criteria for an advanced search by selecting an appropriate value from the drop-down lists by choosing either one Filter or multiple filters from the available categories. After each selection, the results page will automatically load below the filters pane. If you select multiple filters, it behaves like an AND condition.
  - Modified Date—Select one of these options to filter bugs: Last Week, Last 30 days, Last 6 months, Last year, or All.
  - Status—Select Fixed, Open, Other, or Terminated.

Select Fixed to view fixed bugs. To filter fixed bugs, uncheck the Fixed check box and select the appropriate suboption (Resolved or Verified) that appears below the Fixed check box.

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Table 2 Resolved Caveats in VDS-VR 4.1.3 Release

<table>
<thead>
<tr>
<th>Bug ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CISCO-487</td>
<td>CSCUr42138 Tunable for localization timeout.</td>
</tr>
<tr>
<td>CISCO-430</td>
<td>CSCuq45381 Cisco Recorder provides resilience for management and C2 ports.</td>
</tr>
<tr>
<td>CISCO-199</td>
<td>CSCuo14642 Cisco Recorder: no support on tcp capturing on the data port.</td>
</tr>
<tr>
<td>CISCO-596</td>
<td>CSCu36000 Rec: Support “Money Trace” spec.</td>
</tr>
<tr>
<td></td>
<td>CSCu04917 R8 connection sometimes will fail if the livebackup service is enabled.</td>
</tr>
<tr>
<td>CISCO-667</td>
<td>CSCu40362 Recorder filling its c2k logs with PMT error message.</td>
</tr>
<tr>
<td>CISCO-716</td>
<td>CSCuw18561 SR680088185-VOPSN-2725-Missing initial ts packets when ingesting stream.</td>
</tr>
</tbody>
</table>
Select **Open** to view all open bugs. To filter the open bugs, uncheck the Open check box and select the appropriate suboptions that appear below the Open check box.

Select **Other** to view any bugs that are duplicates of another bug.

Select **Terminated** to view terminated bugs. To filter terminated bugs, uncheck the Terminated check box and select the appropriate suboption (Closed, Junked, or Unreproducible) that appears below the Terminated check box. Select multiple options as required.

- **Severity**—Select the severity level:
  1: Catastrophic.
  2: Severe
  3: Moderate
  4: Minor
  5: Cosmetic
  6: Enhancement

- **Rating**—Select the bug’s quality rating: **5 Stars** (excellent), **4 or more Stars** (good), **3 or more Stars** (medium), **2 or more Stars** (moderate), **1 or more Stars** (poor), or **No Stars**.

- **Support Cases**—Select whether the bug has **Support Cases** or **No Support Cases**.

- **Bug Type**—Select whether the bug is **Employee Visible & Customer Visible** or **Customer Visible Only**.

**Step 5** The Bug Toolkit displays the list of bugs based on the specified search criteria.

**Step 6** You can save or email the current search by clicking their respective option.

If you have any problems using the Bug Search tool, log into the Technical Support website at [http://www.cisco.com/cisco/web/support/index.html](http://www.cisco.com/cisco/web/support/index.html) or contact the Cisco Technical Assistance Center (TAC).

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**Configuring New CDE 465 Systems**

Complete the following steps to set up a new CDE 465 with VDS-VR 4.1.3.

**Step 1** Configure `/etc/hosts`, `/etc/sysconfig/network`, and `/etc/sysconfig/network-scripts/ifcfg-eth0`.

**Step 2** Execute `service network start` to start the network device.

**Step 3** Was VDS-VR Release 4.1.0 previously installed on the CDE 465?

If not, skip this step and continue with step 4 below.

If so, remove the existing SuperDoctor5 installation as follows:

- **a.** Enter `yum groupremove recorder`, and when prompted, enter `y` to confirm.
- **b.** Enter `yum clean all`.
- **c.** Execute the following commands:
  ```bash
  /opt/Supernus/SuperDoctor5/uninstallSD5Service.sh
  rpm -e $(rpm -qa 'SuperDoctor*')
  ```
- **d.** Reboot the CDE 465.
- **e.** Log on as `root` and copy (scp) the new 4.1.3 VDS-TV-PROD.iso image to `/root`. 
Configuring New CDE 465 Systems

- Execute `/vdstvpinstall /root/VDS-TV-PROD.iso`.
- If prompted, select 5 for RECORDER.
- Skip step 4 below and resume with step 5.

**Step 4** Execute `/vdstvpinstall /VDS-TV-PROD.iso` and select 5 for RECORDER.

**Step 5** Enter `yum groupupdate recorder`.

**Step 6** Reboot the CDE 465.

**Step 7** Execute `cdsconfig`.

**Step 8** Configure the following files manually (the CDSM GUI is not supported).

a. The interface setup file at arroyo/test/recorder/setupfile (IP addresses are examples only):

```bash
#!/ CServer core configuration. Changes to this file require # a server reboot.
ndvr 1
serverid 248
groupid 1
management eth0
ingest eth2
ingest eth4
control eth0
localip 0afdfb14
http_dscp 37
streamer 0 vault 1 cache 0
bypass_isacheck 1
service http locate port address 10.253.251.29

igb adapters: maxrate 975
igb 1: streaming 0 fill 0 ip 10.253.251.29 tport 0 cport 0
tgid 0
e1000 adapters: maxrate 975
ixgbe adapters: maxrate 9850
ixgbe 0: streaming 1 fill 1 ip 10.253.189.126 tport 0 cport 0
tgid 0
ixgbe 2: streaming 1 fill 1 ip 10.253.34.230 tport 0 cport 0
tgid 0
allow tcp traffic 1
enable generate dynamic tricks 1
trickspeedsv2 -60 -30 -15 -8 8 15 30 60
ftpout if eth0 max utilization mbps 0 max sessions 0 disks 36 model CDE465-4R4

test 4
er_enable0
rtp_enable0
allow vault raid 1
vault raid data blocks 12
vault raid parity blocks 2
```

b. The Recorder setup file at `/home/isa/bss/etc/recsvr.conf` (IP addresses are examples only):

```bash
LogLevel=3
ServerType=3
RMIPAddress=10.252.88.246
RecorderPort=50005
LocationID=dnlab
HBInterval=5
RMName=recMgr
RMPort=80
```
RecorderModelName=CISCO:CDE465-4R4
ProtocolVer=2
RecorderServiceHostName=CDSRECORDER465:INT-RecB
ReportPeriod=60

c. The route table at /arroyo/test/SubnetTable (IP addresses are examples only):

network 10.253.251.29 netmask 255.255.255.224 gateway 10.253.251.1
network 10.253.189.126 netmask 255.255.255.252 gateway 10.253.189.125
network 10.253.34.230 netmask 255.255.255.252 gateway 10.253.34.229

d. The Afterrun file at /arroyo/test/afterrun:

```bash
avs_indexingmode -c
echo 5 > /proc/calypso/tunables/recording_nodatatimeout
```

* Note: This example shows only the minimum required content. The file may contain additional lines.
* Be sure that the afterrun file has -x permission.

e. The rc.local file at /etc/rc.d/rc.local (IP addresses are examples only):

```bash
#!/bin/sh
#
# This script will be executed *after* all the other init scripts.
# Lines below this one modified by cdsflavconfig (RTSP):
# want to do the full Sys V style init stuff.
touch /var/lock/subsys/local
#/bin/touch /var/lock/subsys/avsdb
su - isa -c "arroyo start avsdb" >& /dev/null
#/bin/touch /var/lock/subsys/avsdb
sleep 30
/arroyo/test/run
sleep 90
#
# Uncomment the following lines to start monit based process monitoring
#/home/stats/monit/monit -d 1 -c /home/stats/monit/monitrc >& /dev/null
#sleep 1
#/home/stats/monit/monit -c /home/stats/monit/monitrc reload >& /dev/null
#sleep 1
#/home/stats/monit/monit -c /home/stats/monit/monitrc monitor all >& /dev/null
# End - monit initialization
#sleep 30
#/home/stats/statsd -i 10.253.251.28 -s 255.255.255.192 -d eth0
sleep 30
su - isa -c "arroyo start dnsresolver" >& /dev/null
sleep 3
#
#Comment: Enable recorder service & core dump
#echo 1 > /proc/sys/fs/suid_dumpable
```
# Release Notes for Cisco VDS-VR 4.1.3

## Upgrading the CDE 465 from VDS-VR Release 4.1.1 to 4.1.3

### Step 1
Download the YUM package ISO file (VDS-TV-PROD-4.1.3.iso) and vdstvpinstall script from the Cisco Software Download website.

### Step 2
For the VDS Recorder, on Recorder Manager, offload the VDS Recorder to prevent new recording requests as follows:

a. From the Recorder Manager web GUI, choose **ResourceManager > Recorders**, and select the Recorder to be upgraded.

b. Choose **Recorder CDSRECORDER:XXXX:YYY > Configuration**, and change the value of AdminState from InService to **OutOfService**.

c. Change the value of ArchiveAdminState from InService to **OutOfService**.

d. Click **Commit Changes** to make changes take effect.

### Step 3
Log into the VDS Recorder via SSH as user **root**.

### Step 4
Is the YUM server used?

- **If yes**, skip this step and continue with step 5.
- **If no**, copy the YUM package ISO image file and YUM vdstvpinstall script to the VDS Recorder.

    ```bash
    # scp -p <user>@<remote_ip_address>:VDS-TV-4.1.3.iso /root/.
    # scp -p <user>@<remote_ip_address>:vdstvpinstall /root/.
    ```

### Step 9
Reboot the CDE 465.

### Step 10
Confirm successful startup by entering the following:

```bash
pgrep avsdb
```

The system response should include two PIDs.

### Step 11
Start **cserver** using one of the following methods.

- If starting cserver for the first time, enter `/arroyo/test/run -C`, then enter `cleardir`.
- If cserver was previously started using `/arroyo/test/run -C`, simply enter `arroyo/test/run`.

---

**Upgrading the CDE 465 from VDS-VR Release 4.1.1 to 4.1.3**
Step 5  Execute the following commands to kill the /home/stats/monit/monit -d 1 -c /home/stats/monit/monitrc process and prevent applications from being restarted automatically:

```bash
# ps -ef|grep monit
# kill -9 <PID>
```

Execute the following command to confirm that the monit process is killed.

```bash
# ps -ef|grep monit
```

Step 6  Execute the following commands to stop all applications, avsdb, recsvr, livebackup, and dnsresolver:

```bash
# su - isa
# arroyo stop
```

Execute the following commands to confirm that all applications, especially avsdb and livebackup, have been stopped.

```bash
# arroyo status
# exit
```

Step 7  Is the YUM server used?

- If **yes**, change the configuration baseurl in /etc/yum.repos.d/vdstv.repo to install the 4.1.3-bX build from YUM server as follows:

  ```bash
  baseurl= http://172.22.116.17/rec_4.1.3-bX/
  ```

- If **no**, execute the following commands to run vdstvprepinstall script to prepare for YUM installation:

  ```bash
  # cd /root
  # ./vdstvprepinstall VDS-TV-4.1.3.iso
  ```

When prompted, choose **5 for 5) RECORDER**.

**Note**

When installing YUM for the first time, execute vdstvprepinstall locally on the Recorder. This will install YUM RPMs, create configuration files, and create a local repository.

For subsequent YUM upgrades, you can use the same method, or optionally, use an external YUM server. To use an external YUM server, configure the server in /etc/yum.repos.d/vdstv.repo as shown in the following example:

```bash
baseurl= http://172.22.116.17/rec_4.1.3-bX/
```

Step 8  Execute the following YUM command to upgrade to Release 4.1.3:

```bash
# yum -y groupupdate recorder
```

Step 9  Remove all existing tunables in /arroyo/test/afterrun except for the following two lines:

- `avs_indexingmode -c`
- `echo 10 > /proc/calypso/tunables/recording_nodatatimeout`

**Note**

Increasing `recording_nodatatimeout` from the default value of 5 seconds to 10 seconds could enable the ingest resiliency feature.
**Step 10** Check the execution permission of /arroyo/test/afterrun to confirm that it has execution permission.

```
# ll /arroyo/test/afterrun
```

If afterrun doesn’t have execution permission, add permission.

```
# chmod +x /arroyo/test/afterrun
```

**Step 11** Confirm that /home/isa/bss/etc/recsvr.conf includes the configuration for R8 version ProtocolVer=4.

```
# vi /home/isa/bss/etc/recsvr.conf
```

**Note** ProtocolVer specifies the R8 version. If this configuration is absent in the recsvr.conf, the application recsvr behaves as R8I02 by default. If present, ProtocolVer=4 designates R8I04, while ProtocolVer=2 designates R8I02 (the default).

**Step 12** Reboot the Recorder.

```
# reboot
```

**Step 13** After the VDS Recorder boots up, check the status of locate port as follows:

```
# cat /proc/calypso/status/resiliencyinfo
```

**Example: Locate port is not started**

```
[root@CDE460-17-30 tmp]# cat /proc/calypso/status/resiliencyinfo
Resiliency Info:
Configured Service Addresses: 1
  Service Address: 192.168.190.100
    HTTP Redirector Service: Not Usable
```

**Example: Locate port is started successfully**

```
[root@CDE460-17-30 ~]# cat /proc/calypso/status/resiliencyinfo
Resiliency Info:
Configured Service Addresses: 1
  Service Address: 192.168.190.100
    HTTP Redirector Service: Primary
```

**Step 14** On Recorder Manager, bring the VDS Recorder online as follows:

a. From the Recorder Manager web GUI, choose **ResourceManager > Recorders**, and select the Recorder to be upgraded.

b. Choose **Recorder CDSRECORDER:XXXX:YYY > Configuration**, and change the value of AdminState from OutOfService to **InService**.

c. Change the value of ArchiveAdminState from OutOfService to **InService**.

d. Click **Commit Changes** to make changes take effect.

**Step 15** Check the heartbeat messages in the Event Log of Recorder Manager to confirm that the VDS Recorder is operational, as follows:

```
# tail -f /opt/cisco/usrm/EventLog/DDMMMYYYY_000000.txt | grep <Recorder_IP_ADDR>
```

**Example:**

```
```
Downgrading the CDE 465 from VDS-VR Release 4.1.3 to 4.1.1

**Step 1** Download the YUM package (for example, VDS-TV-4.1.1-b7.iso) and vdstvpinstall script for Release 4.1.1 from the Cisco software download website.

**Step 2** On Recorder Manager, offload the VDS Recorder to prevent new recording requests as follows:
   a. From the Recorder Manager web GUI, choose `ResourceManager > Recorders`, and select the Recorder to be upgraded.
   b. Choose `Recorder CDSRECORDER:XXXX:YYY > Configuration`, and change the value of `AdminState` from `InService` to `OutOfService`.
   c. Change the value of `ArchiveAdminState` from `InService` to `OutOfService`.
   d. Click **Commit Changes to make changes take effect**.

**Step 3** Log in to the VDS Recorder via SSH as user `root`.

**Step 4** Is the YUM server used?
   - If **yes**, skip this step and continue with step 5.
   - If **no**, copy the YUM package ISO image file and YUM vdstvpinstall script to the VDS Recorder.
     If YUM server is used, please ignore this step.
     ```
     # scp -p <user>@<remote_ip_address>:VDS-TV-4.1.1.iso /root/.
     # scp -p <user>@<remote_ip_address>:vdstvpinstall /root/.
     ```

**Step 5** Execute the following commands to kill the `/home/stats/monit/monit -d 1 -c /home/stats/monit/monitrc` process and prevent applications from being restarted automatically:
   ```
   # ps -ef|grep monit
   # kill -9 <PID>
   ```
   Execute the following commands to confirm that the monit process is killed.
   ```
   # ps -ef|grep monit
   ```

**Step 6** Execute the following commands to stop all applications, especially avsdb and livebackup:
   ```
   # su - isa
   # arroyo stop
   ```
   Execute the following commands to confirm that all applications, especially avsdb and livebackup, have stopped.
   ```
   # arroyo status
   # exit
   ```

**Step 7** Execute the following commands to remove the 4.1.3 YUM packages:
   ```
   # yum -y groupremove recorder
   # yum clean all
   # reboot
   ```
   Wait until the Recorder boots up to continue with installation of the 4.1.1 package.

**Step 8** Is the YUM server used?
   - If **yes**, change the configuration baseurl in `/etc/yum.repos.d/vdstv.repo` to install the 4.1.1-b7 build from the YUM server as follows:
     ```
     baseurl= http://172.22.116.17/rec_4.1.1-b7/
     ```
• If no, execute the following commands to run the vdstvprepinstall script to prepare for YUM installation:
  
  # cd /root
  # ./vdstvprepinstall VDS-TV-4.1.1.iso

  When prompted, choose 5 for 5) RECORDER.

Step 9  Execute the following YUM command to downgrade to Release 4.1.1:

  # yum -y groupupdate recorder

Step 10  Reboot the VDS Recorder.

  # reboot

  After the VDS server has rebooted, the services avsdb, cserver, monit, recsvr, and dnsresolver should be started automatically as specified in /etc/rc.local.

Step 11  Check the status of locate port as follows:

  # cat /proc/calypso/status/resiliencyinfo

  **Example: Locate port is not started**

  [root@CDE460-17-30 tmp]# cat /proc/calypso/status/resiliencyinfo
  Resiliency Info:
  Configured Service Addresses: 1
  Service Address: 192.168.190.100
  HTTP Redirector Service: Not Usable

  **Example: Locate port is started successfully**

  [root@CDE460-17-30 ~]# cat /proc/calypso/status/resiliencyinfo
  Resiliency Info:
  Configured Service Addresses: 1
  Service Address: 192.168.190.100
  HTTP Redirector Service: Primary

Step 12  On Recorder Manager, bring the VDS Recorder online as follows:

  a. From the Recorder Manager web GUI, choose **ResourceManager > Recorders**, and select the Recorder to be upgraded.

  b. Choose **Recorder CDSRECORDER:XXXX:YYY > Configuration**, and change the value of **AdminState** from **OutOfService** to **InService**.

  c. Change the value of **ArchiveAdminState** from **OutOfService** to **InService**.

  d. Click **Commit Changes** to make changes take effect.

Step 13  To confirm that the VDS Recorder is operational, check the heartbeat messages in the EventLog of Recorder Manager as follows:

  # tail -f /opt/cisco/usrm/EventLog/DDMMMYYYY_000000.txt |grep <Recorder_IP_ADDR>

  **Example:**

### Tunable Default Values Compared for CDE465-4R4

Table 3 compares the tunable values for VDS-VR Release 4.1.2 vs. 4.1.3 on the CDE465-4R4.

<table>
<thead>
<tr>
<th>Tunable</th>
<th>Default Value in 4.1.2</th>
<th>Default Value in 4.1.3</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>/proc/calypso/internal/enable_packet_capture</code></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><code>/proc/calypso/tunables/localizeCancelIfOutstandingAfterMinutes</code></td>
<td>New tunable in 4.1.3</td>
<td>0000002d0</td>
</tr>
<tr>
<td><code>/proc/calypso/tunables/trick_ebpenableimplicit</code></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><code>/proc/calypso/tunables/trick_ebpendingusingvideo</code></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><code>/proc/calypso/tunables/recording_maxcapturebandwidth</code></td>
<td>0000000324a9a700</td>
<td>000000024f47300</td>
</tr>
<tr>
<td><code>/proc/calypso/tunables/recording_maxdiskbandwidth</code></td>
<td>00000003473bc00</td>
<td>00000003dfd2400</td>
</tr>
<tr>
<td><code>/proc/calypso/tunables/recording_graceperiod</code></td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td><code>/proc/calypso/tunables/recording_nodatatimeout</code></td>
<td>1 *</td>
<td>1 *</td>
</tr>
<tr>
<td><code>/proc/calypso/tunables/ingest_capture_min_failover_timeout</code></td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td><code>/proc/calypso/tunables/ndvr_recording_threshold</code></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><code>/proc/calypso/tunables/ndvr_delivery_threshold</code></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><code>/proc/calypso/tunables/archivePushUseExpectHeader</code></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><code>/proc/calypso/tunables/http_disable_mac_validation</code></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><code>/proc/sys/net/core/netdev_max_backlog</code></td>
<td>5000</td>
<td>5000</td>
</tr>
</tbody>
</table>

* Increased to 10 in /arroyo/test/afterrun to enable live resiliency.

### Upgrading the CDE 460 from VDS-VR Release 3.4.2ES2 to 4.1.3

**Step 1** Download the YUM package ISO file (VDS-TV-PROD-4.1.3.iso) and vdstvprepinstall script from the Cisco Software Download website.

**Step 2** For the VDS Recorder, on Recorder Manager, offload the VDS Recorder to prevent new recording requests as follows:

a. From the Recorder Manager web GUI, choose **ResourceManager > Recorders**, and select the recorder to be upgraded.

b. Choose **Recorder CDSRECORDER:XXXX:YYY > Configuration**, and change the value of AdminState from InService to **OutOfService**.

c. Change the value of ArchiveAdminState from InService to **OutOfService**.

d. Click **Commit Changes** to make changes take effect.

**Step 3** Log into the VDS Recorder via SSH as user **root**.

**Step 4** Is the YUM server used?

- If **yes**, skip this step and continue with step 5.
- If **no**, copy the YUM package ISO image file and YUM vdstvprepinstall script to the VDS Recorder.
Upgrading the CDE 460 from VDS-VR Release 3.4.2ES2 to 4.1.3

Step 5 Execute the following commands to kill the /home/stats/monit/monit -d 1 -c /home/stats/monit/monitrc process and prevent applications from being restarted automatically:

```
# ps -ef|grep monit
# kill -9 <PID>
```

Execute the following commands to confirm that the monit process is killed.

```
# ps -ef|grep monit
```

Step 6 Execute the following commands to stop all applications, avsdb, recsvr, livebackup, and dnsresolver:

```
# su - isa
# arroyo stop
```

Execute the following commands to confirm that all applications, especially avsdb and livebackup have been stopped.

```
# arroyo status
# exit
```

Step 7 Enter the following command to back up the database:

```
# cd /arroyo/db
# cp -pr DATADIR DATADIR-342ES2
```

Step 8 To resolve a Bash vulnerability, you must apply a patch for Bash. Go to the link below, download the document file BashVulnerability-ReleaseNotes.docx, and follow the steps for patch installation.

http://cdsrelease.cisco.com/hotpatch/Bash_Upgrad_3.2.25/

Step 9 Is the YUM server used?

- If yes, change the configuration baseurl in /etc/yum.repos.d/vdstv.repo to install 4.1.3-bX build from YUM server as follows:

```
baseurl= http://172.22.116.17/rec_4.1.3-bX/
```

- If no, execute the following commands to run vdstvprepinstall script to prepare for YUM installation:

```
# cd /root
# ./vdstvprepinstall VDS-TV-4.1.3.iso
```

When prompted, choose 5 for 5) RECORDER.

Note When installing YUM for the first time, execute vdstvprepinstall locally on the Recorder. This will install YUM RPMs, create configuration files, and create a local repository.

For subsequent YUM upgrades, you can use the same method or, optionally, use an external YUM server. To use an external YUM server, configure the server in /etc/yum.repos.d/vdstv.repo as shown in the following example:

```
baseurl= http://172.22.116.17/rec_4.1.3-bX/
```

Step 10 Execute the following YUM commands to upgrade to Release 4.1.3:

```
# yum -y groupupdate recorder
```
Step 11 Remove all existing tunables in /arroyo/test/afterrun except for the following two lines:
- `avs_indexingmode -c`
- `echo 10 > /proc/calypso/tunables/recording_nodatatimeout`

**Note**
- Specifying C2 index “echo 0x80 > /proc/calypso/internal/trick_test0” is replaced by “avs_indexingmode –c” since release 3.6.
- Increasing recording_nodatatimeout from the default value of 5 seconds to 10 seconds could enable the ingest resiliency feature.

Step 12 Check the execution permission of /arroyo/test/afterrun and confirm that it has execution permission.

```
# ll /arroyo/test/afterrun
```

If afterrun does not have execution permission, add permission.
```
# chmod +x /arroyo/test/afterrun
```

Step 13 Confirm that /home/isa/bss/etc/recsvr.conf includes the configuration for R8 version ProtocolVer=4.
```
# vi /home/isa/bss/etc/recsvr.conf
```

**Note**
ProtocolVer specifies the R8 version. If this configuration is absent in the recsvr.conf, the application recsvr behaves as R8I02 by default. If present, ProtocolVer=4 designates R8I04, while ProtocolVer=2 designates R8I02 (the default).

Step 14 Reboot the Recorder.
```
# reboot
```

Step 15 After the VDS Recorder boots up, check the status of locate port as follows:
```
# cat /proc/calypso/status/resiliencyinfo
```

**Example: Locate port is not started**

```
[root@CDE460-17-30 tmp]# cat /proc/calypso/status/resiliencyinfo
Resiliency Info:
    Configured Service Addresses: 1
    Service Address: 192.168.190.100
    HTTP Redirector Service: Not Usable
```

**Example: Locate port is started successfully**

```
[root@CDE460-17-30 ~]# cat /proc/calypso/status/resiliencyinfo
Resiliency Info:
    Configured Service Addresses: 1
    Service Address: 192.168.190.100
    HTTP Redirector Service: Primary
```

Step 16 On Recorder Manager, bring the VDS Recorder online as follows:

a. From the Recorder Manager web GUI, choose **ResourceManager > Recorders**, and select the Recorder to be upgraded.
Downgrading the CDE 460 from VDS-VR Release 4.1.3 to 3.4.2ES2

Step 1
Download the YUM package (for example, VDS-TV-3.4.2ES2-b7.iso) and vdstvprepinstall script for Release 3.4.2ES2 from the Cisco software download website.

Step 2
On Recorder Manager, offload the VDS Recorder to prevent new recording requests as follows:

a. From the Recorder Manager web GUI, choose Resource Manager > Recorders, and select the Recorder to be upgraded.

b. Choose Recorder CDSRECORDER:XXXX:YYY > Configuration, and change the value of AdminState from InService to OutOfService.

c. Change the value of ArchiveAdminState from InService to OutOfService.

d. Click Commit Changes to make changes take effect.

Step 3
Log in to the VDS Recorder via SSH as user root.

Step 4
Is the YUM server used?

- If yes, skip this step and continue with step 5.
- If no, copy the YUM package ISO image file and YUM vdstvprepinstall script to the VDS Recorder.

# scp -p <user>@<remote_ip_address>:VDS-TV-3.4.2ES2.iso /root/.
# scp -p <user>@<remote_ip_address>:vdstvprepinstall /root/.

Step 5
Execute the following commands to kill the /home/stats/monit/monit -d 1 -c /home/stats/monit/monitrc process and prevent applications from being restarted automatically:

# ps -ef|grep monit
# kill -9 <PID>

Execute the following command to confirm that the monit process is killed.

# ps -ef|grep monit

Step 6
Execute the following commands to stop all applications, especially avsdb and livebackup:

# su - isa
# arroyo stop

Execute the following commands to confirm that all applications, especially avsdb and livebackup, have stopped.

# arroyo status
# exit
Step 7: Execute the following commands to remove 4.1.3 YUM packages:

```bash
# yum -y groupremove recorder
# yum clean all
# reboot
```

Step 8: After Recorder boots up, run the cdsinstall script to install the 3.4.2 ISO image as follows:

```bash
# cd /root
# ./cdsinstall-3.4.2es2 CDS-TV-3.4.2es2-b22.iso
```

Step 9: Use the following commands to switch to the database that was backed up before the upgrade:

```bash
# cd /arroyo/db
# mv DATADIR DATADIR-413
# mv DATADIR-342ES2 DATADIR
```

Step 10: Edit /arroyo/test/afterrun to replace the new index mode tool with the old index tunable.

```bash
avs_indexingmode -c
echo 0x80 > /proc/calypso/internal/trick_test0
```

Step 11: Reboot the VDS Recorder.

```bash
# reboot
```

After the VDS server has rebooted, the services avsdb, cserver, monit, recsvr, and dnsresolver should be started automatically as specified in /etc/rc.local.

Step 12: Check the status of locate port as follows:

```bash
# cat /proc/calypso/status/resiliencyinfo
```

Example: Locate port is not started

```
[root@CDE460-17-30 tmp]# cat /proc/calypso/status/resiliencyinfo
Resiliency Info:
Configured Service Addresses: 1

Service Address: 192.168.190.100
HTTP Redirector Service: Not Usable
```

Example: Locate port is started successfully

```
[root@CDE460-17-30 ~]# cat /proc/calypso/status/resiliencyinfo
Resiliency Info:
Configured Service Addresses: 1

Service Address: 192.168.190.100
HTTP Redirector Service: Primary
```

Step 13: On Recorder Manager, bring the VDS Recorder online as follows:

a. From the Recorder Manager web GUI, choose **ResourceManager > Recorders**, and select the Recorder to be upgraded.

b. Choose **Recorder CDSRECORDER:XXXX:YYY > Configuration**, and change the value of AdminState from OutOfService to **InService**.

c. Change the value of ArchiveAdminState from OutOfService to **InService**.

d. Click **Commit Changes** to make changes take effect.

Step 14: To confirm that the VDS Recorder is operational, check the heartbeat messages in the Event Log of Recorder Manager as follows:
# tail -f /opt/cisco/usrm/EventLog/DDMMMYYYY_000000.txt |grep <Recorder_IP_ADDR>

Example:

## Tunable Default Values Compared for CDE 460

Table 4 compares the tunable values for VDS-VR Release 3.4.2ES2 vs. 4.1.3 on the CDE 460.

<table>
<thead>
<tr>
<th>Tunable</th>
<th>Default Value in 3.4.2ES2</th>
<th>Default Value in 4.1.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>/proc/calypso/internal/enable_packet_capture</td>
<td>New tunable in 4.1.3</td>
<td>0</td>
</tr>
<tr>
<td>/proc/calypso/tunables/localizeCancelIfOutstandingAfterMinutes</td>
<td>New tunable in 4.1.3</td>
<td>000002d0</td>
</tr>
<tr>
<td>/proc/calypso/tunables/trick_ebp_enableimplicit</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>/proc/calypso/tunables/trick_ebp_endsusingvideo</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>/proc/calypso/tunables/recording_maxcapturebandwidth</td>
<td>000000014f46b040</td>
<td>000000014f46b040</td>
</tr>
<tr>
<td>/proc/calypso/tunables/recording_maxdiskbandwidth</td>
<td>00000002160ec00</td>
<td>00000002160ec00</td>
</tr>
<tr>
<td>/proc/calypso/tunables/recording_graceperiod</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>/proc/calypso/tunables/recording_nodatatimeout</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>/proc/calypso/tunables/archivePushUseExpectHeader</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>/proc/calypso/tunables/http_disable_mac_validation</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>/proc/sys/net/core/netdev_max_backlog</td>
<td>5000</td>
<td>5000</td>
</tr>
</tbody>
</table>

* Increased to 10 in /arroyo/test/afterrun to enable live resiliency.
Related Documentation

Refer to the following documents for additional information about TV Recorder:

- Cisco VDS-VR 4.1 Software Configuration Guide
- Cisco Content Delivery Engine 465 Hardware Installation Guide
- Cisco Content Delivery Engine 205/220/250/280/420/460/470 Hardware Installation Guide
- Regulatory Compliance and Safety Information for Cisco Content Delivery Engines
- Open Source Used in Cisco VDS-VR 4.1.3

The entire software documentation suite is available on Cisco.com at:

The entire VDS hardware documentation suite is available on Cisco.com at:

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see What’s New in Cisco Product Documentation at: http://www.cisco.com/c/en/us/td/docs/general/whatsnew/whatsnew.html.

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