



# OCAP Application Load from a USB Drive Technical Reference

## Overview

### Background

The feature that allows a set-top box (STB) to launch OpenCable™ Application Platform (OCAP™) applications from a USB drive on the STB makes it possible to run development builds or demo applications on the STB without a change to the headend configuration, or even without a headend, itself. This feature is disabled on STBs by default, but can be enabled on individual STBs through use of the cmd2000 utility, which is run from either the DNCS or from a PC which can access the STB through the network. This feature can be used in two possible modes, connected or disconnected.

- The connected mode refers to those configurations where the STB is physically connected to a headend. In these cases, the application is signaled in the Extended Application Information Table (XAIT) on the headend. If the application to be launched is available on the USB drive, the STB launches the application from the USB drive. If the application is not available on the USB drive, the STB launches the application from the headend.
- The disconnected mode refers to those configurations where the STB is without a headend. In these cases, the STB launches the application from the USB drive based upon the XAIT XML file on the USB drive.

### Purpose

This technical reference describes how to configure the system for loading OCAP applications from a USB drive and provides examples of some required and optional configuration files.

## **Audience**

This document is written for OCAP application developers. System operators and engineers who help support and troubleshoot OCAP will also find this document to be useful.

## **Document Version**

This is the first formal release of this document.

# Configuring the OCAP Application Load from a USB Drive

## Supported USB Drives

The following USB version 2.0 drives are supported for launching OCAP applications on the STB:

- SanDisk Cruzer 256 MB
- SanDisk Cruzer 1.0 GB
- SanDisk Cruzer 4.0 GB

## USB Drive Preparation

The following list highlights the requirements for the preparation of the USB drive.

- The USB drive should have a directory called *appOverrideDir* under the root directory. This subdirectory corresponds to the base directory of the Digital Storage Media Command and Control (DSMCC) carousel for this application, as if the application was signaled as a regular broadcast application. Other files and directories in the root directory are not used by this feature.
- In the *appOverrideDir* directory of the USB drive, there should be a file called *xait.xml*, which describes a list of available applications. The format of the *xait.xml* file is described in *Format of Referenced Files* (on page 6).
- In the *appOverrideDir* directory of the USB drive, there should be a directory for every available application that contains all required files and class files for the application.
- In the *appOverrideDir* directory of the USB drive, there may be a file called *overriddenDate*, which defines the date that should be set for testing. Note that this file will not be used if the STB is connected to a headend. Even if the STB is not connected to the headend, this file is optional. The format of this file's content is described in *Format of Referenced Files* (on page 6).
- In the *appOverrideDir* directory of the USB, there may be a file called *ignoreXAITFromHeadEnd*, which forces the OCAP stack to ignore the XAIT signal from the headend and to always use the XAIT signal from the USB drive.

## Turning the Feature On or Off

Use the cmd2000 utility to enable or disable this feature. The following example illustrates the use of the cmd2000 utility for the purpose of enabling the OCAP application load from a USB port on the STB.

Type the following command and press **Enter**, as **dncs** user, from either the DNCS or from a PC that has accessed the STB from the network.

```
cmd2000 [IP address of STB] "resdiag usb-storage on|off"
```

**Example:** cmd2000 10.5.70.161 "resdiag usb-storage on"

**Result:** Output similar to the following appears at the DNCS or the PC, depending upon where the command was run:

```
opus$ cmd2000 10.5.70.161 "resdiag usb-storage on"
WARNING - Only command responses will be monitored.
          Log monitoring sockets are already in use.

10/13@15:31 - Sending "resdiag usb-storage on" to 1 IP address...
10/13@15:31 - RESPONSE from 10.5.70.161      : SUCCESS: enabled usb flag...
10/13@15:31 - RESPONSE from 10.5.70.161      : mpeos_mountUsbDrive() <init>
10/13@15:31 - RESPONSE from 10.5.70.161      : mpeos_mountUsbDrive() SUCCESS: usb drive found...
10/13@15:31 - RESPONSE from 10.5.70.161      : mpeos_mountUsbDrive() Mounting usb drive...
10/13@15:31 - RESPONSE from 10.5.70.161      : mpeos_mountUsbDrive() SUCCESS: Mounted usb drive...
10/13@15:31 - TCP/IP Connection successfully closed by remote 10.5.70.161 (command completed)
Bye.
opus$
opus$
opus$
opus$
opus$
```

**Note:** This setting takes effect upon the next boot-up of the STB and remains persistent.

## Selecting the Mode of Operation

By default, this feature works in the connected mode. If the XAIT signal is not received from the headend before the timeout (currently set to 15 seconds), then the mode is switched to the disconnected mode and the stack loads the XAIT table from the USB drive.

If the ignoreXAITFromHeadEnd file is present, then the feature works in the disconnected mode from startup. The XAIT signal from the headend is never requested.

## Running Applications from a USB Drive

Follow these general guidelines to use a USB drive on the STB to run an OCAP application.

- 1 Create the *appOverrideDir* directory on the USB drive. This directory must reside just under the root directory.
- 2 Create a directory in the *appOverrideDir* directory for every available application and be certain that it contains all required and/or class files for the application(s).
- 3 Create an *xait.xml* file and copy this file to the *appOverrideDir* directory, as well.
- 4 Ensure that the **orgID** and **appID** values in the *xait.xml* file are the same as those signaled from the headend for connected mode.
- 5 Insert the USB drive into the STB and reboot the STB.

## Format of Referenced Files

### Format of the xait.xml File

The following is an example of an xait.xml file.

```
<?xml version="1.0" encoding="UTF-8"?>
<applications>
  <application>
    <orgId>0x12</orgId>
    <appId>0x3456</appId>
    <classPath>myxlet1</classPath>
    <initialClass>com.fictitious.MyXlet1</initialClass>
    <appName>MyXlet1</appName>
    <controlCode>present</controlCode>
    <priority>250</priority>
    <appParams>
      <appParam>mypara1=myvalue11</appParam>
      <appParam>myparam12=myvalue12</appParam>
    </appParams>
  </application>
  <application>
    <orgId>0x12</orgId>
    <appId>0x3457</appId>
    <classPath>myxlet2</classPath>
    <initialClass>com.fictitious.Xlet2</initialClass>
    <appName>Xlet2</appName>
    <controlCode>autostart</controlCode>
    <priority>255</priority>
    <appParams>
      <appParam>mypara21=myvalue21</appParam>
      <appParam>myparam22=myvalue22</appParam>
    </appParams>
  </application>
</applications>
```

## Format of the overriddenDate File

In the disconnected mode, the overriddenDate file supplies the stack with a time that it would have normally received from the headend. The overriddenDate file must be in the following format: MMddHHmmyyyy.

**Note:** MM is for month, dd is for day, HH is for hour, mm is for minute, and yyyy is for year.

**Example:** 101312552011 for 12:55 p.m., on October 13, 2011

## For More Information

If you have additional technical questions, call Cisco Services at 770 236-2200 or 866 787-3866 for assistance. Follow the menu options to speak with a service engineer.



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