CISCO

Guidelines for Adding URL Modifiers and Replacing URL Keywords

Overview

Introduction

This document includes new and enhanced Uniform Resource Locater (URL) modifiers and keywords that application developers can use to enhance the Digital Broadband Delivery System (DBDS) network.

The Service Application Manager (SAM) is a process on the Digital Network Control System (DNCS) that associates a specific service with attributes (as defined by URL modifiers) that define how the service operates. The SAM URL then passes this information to the set-top boxes.

A service is a combination of the following:

- An application URL

- A group of URL modifiers that restricts or more completely defines the service

- An application parameter (such as the source number)

You can use a variety of URL modifiers for the services defined in the SAM.

The DNCS provides a number of standard URLs for use in the DBDS network. These URLs are:

- WatchTV

  Example: bfs://resapp/watchtv

- Music

  Example: bfs://resapp/music

- VirtChan

  Example: bfs://resapp/virtchan

- IPPV

  Example: bfs://resapp/ippv

You can enhance these standard URLs using URL modifiers to trigger special behaviors. For example, the NOPVR modifier tells the DHCT to prohibit subscribers from recording the service on their DVRs.

To support unique configurations and other applications, we have developed a set of URL modifiers and case-significant keywords for applications to use.

Purpose

This document provides information about the latest URL modifiers available for the services defined in the SAM URL. Guidelines for replacing URL keywords are also included in this bulletin.

Scope

The contents of this document apply only to sites using the SA Resident Application (SARA) version 1.58 or later. Sites using applications from other vendors might not use a Cisco SAM, and will need to use another means to provide these capabilities.

Audience

This document is intended for system operators of Cisco's DBDS and application developers who create applications for the DBDS. Field service engineers who help system operators manage their systems may also find the contents of this technical bulletin useful.

Related Publications

Visit our website (https://www.sciatl.com/subscriberextranet/techpubs) to view additional publications about our products.

You need a user name and password to access this website. If you do not have a user name and password, go to https://www.scientificatlanta.com/dsnexplorer/register.htm to complete and submit a registration form.

Note: You may need to install a PDF reader, such as Adobe Acrobat Reader, on your system to view these publications.

Document Version

This is the second release of this guide. In addition to minor text and graphic changes, the following table provides the technical changes to this guide.

Description	See Topic
Marked new and updated URL modifiers	*URL Modifiers List* (on page 5)
Updated the string value and parameters usage	*Parameters and String Values* (on page 9)
Marked updated keyword	*Case-Significant Keywords* (on page 11)

URL Modifiers

Introduction

In the DNCS, application clients are identified by URLs that are entered on the SAM user interface. You can specify optional application attributes on the SAM Server and transmit them as modifiers to the application URL.

Note: This document does not provide detailed instructions for adding or editing a SAM URL. For detailed instructions, refer to the *Digital Network Control System Online Help*, available from the DNCS application or as a separate CD.

Structure of URL Modifiers

The following shows the structure of a URL:

<protocol>:///<app-servername>/<path/filename>;<name>=<value>;<name>=<value>

Example: bfs:///apps/deliapp.ptv;EID=16;version=1.2.5

Notes:

- Spaces are not allowed in the URL structure
- The URL text is case-sensitive

URL Modifiers List

The following table lists modifiers that can be added to the application URL as **name=value** pairs. The following URL modifiers are either new or updated for this document:

- CCCM_SRC - New

- HD - Updated

- memory - Updated

- NO_CCCM - New

Note: A value of **None** in the **Default** column means that no default value is required.

Name	Value	Default	Description
chanBan	{TRUE, FALSE}	TRUE	Used by Channel Manager to indicate whether the channel banner is shown when this channel-based service is activated.
CCCM_SRC ***NEW***	<sourceID>	None	Modifies an existing SAM service to place an analog source in the CableCARD™ Channel Map so that the host tunes to the analog channel, even if its CableCARD module is authorized to decrypt the digital source.
			Establishes a digital simulcast channel for an existing analog service without disrupting scheduled DVR or VCR recording.
EAID	<decimal number>	None	If a package has been created for conditional access, specify the Entitlement Agent used by the CAM client. Specify **1** for internal PowerKEY® secure micro.
EID	<decimal number>	None	If the DHCT is not authorized for this EID (PowerKEY package), the service is not loaded or executed.
			Only available for WatchTV and for third-party applications.
FBIT	<decimal number>	None	If the DHCT is not authorized for these NDS feature bits, the service is not loaded or executed.

Name	Value	Default	Description
forceLoad	{TRUE, FALSE}	FALSE	Specifies that this application *must* be loaded at boot-time before entering advanced services.
			The DHCT cannot be powered on until these applications are read into memory. If the DHCT runs low on memory, these applications remain and others must be offloaded.
			Note: This modifier does not let the user cancel the loading process.
			Loading is subject to a timeout at which time the DHCT (if capable) displays analog services.
HD ***UPDATED***	N/A	FALSE	Used by WatchTV software application. **;HD** indicates that this is a channel that normally displays HD content.
			Note: WatchTV displays a barker if the DHCT cannot decode HD content.
level2	{TRUE, FALSE}	FALSE	Indicates that this is a "level 2" application using the SARA Tuner Manager.
			Note: You must obtain approval from our Client Architecture Group to be a level 2 application.
loadOnBoot	{TRUE, FALSE}	FALSE	Specifies that this application should be loaded at boot-time. Lets the user cancel the loading process.
			Note: Using this modifier increases the DHCT boot time. Thus, service providers control whether or not an application receives this designation.
lockWith	<serviceID>	None	Used by Channel Manager. Specifies that this application's blocking should be tied to the blocking of another channel.
			For example, if the parent application is blocked, then its child application is blocked also.

Name	Value	Default	Description
memory ***UPDATED***	<decimal number>	None	Specifies the minimum amount of system memory (RAM - in kiloBytes [kB]) required to run the application. **Note:** This parameter does not prevent the set-top from attempting to load the application if not enough free memory is available.
NOAVSYNC	N/A	FALSE	Used by WatchTV application for I-frame Music Choice channels. Indicates that audio should start streaming as soon as it is available, instead of waiting for the first frame of video.
NO_CCCM ***NEW***	N/A	FALSE	Hides the service from CableCARD hosts.
NOPVR	N/A	FALSE	Specifies that subscribers cannot record (to DVR) or time-shift this application.
obstructedRect	<xmin, ymin, xmax, ymax>	<0,0,0,0>	Used by BaseApp to determine the screen region which an overlay service has reserved for use by the channel-based service. **Note:** The default setting is "unobstructed".
onDemand	{TRUE, FALSE}	FALSE	Used by channel banner as proxy for Interactive Program Guide (IPG) and Navigator: ■ If **FALSE**, then the program's start time and duration is shown ■ If **TRUE**, then the text **All Day** is shown
screenRect	<xmin, ymin, xmax, ymax>	<0,0,639,479>	Used by BaseApp to determine the overlay service screen size. **Note:** The default is "full screen".

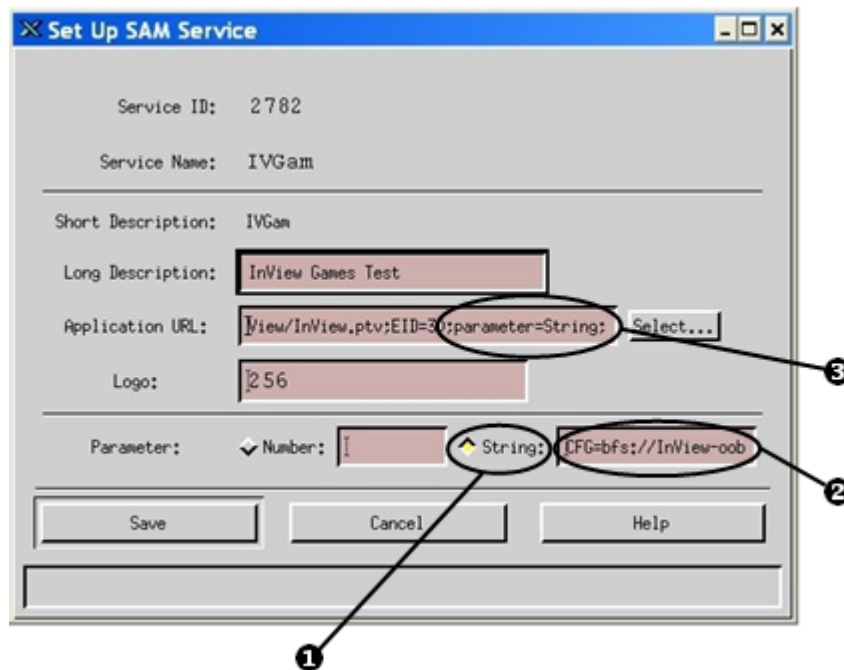| Name	Value	Default	Description
SEL	<serviceID>	None	Used by IPG for integration with Anything-On-Demand (xOD).
			Defines an overlay service to launch instead of the **Future Program Options** window when a program belonging to this service is selected in the IPG by the subscriber.
signon	{TRUE, FALSE}	FALSE	If the DHCT has not yet signed on when this application's service is activated, it performs a fast boot to sign the DHCT on immediately (to provide interactive services).
			This modifier supports Preferred Sign on
trans		TRUE	Used by BaseApp to determine whether the service is either:
			■ Channel-transient (**TRUE**)
			■ Not channel-transient (**FALSE**)

Parameters and String Values

There are two ways to pass parameters in a URL:

1 Using parameter string values

2 Using user-defined parameters

Parameters Using String Values

You can use parameter and string values to modify the URLs. The SAM client passes the string to the app client upon service activation if all of the following conditions are met:

1 If the string option is highlighted on the SAM Service GUI

2 If a string is entered on the SAM Server GUI string field

3 If the "parameter=String;" is defined in the URL

User-Defined Parameters

Another way to pass a parameter is to define it explicitly in the URL.

The following example passes the Server IP (parameter) with a value of 172.92.9.4 (string) to the service (myapp.ptv):

bfs:///myapp.ptv;ServerIPaddr=172.92.9.4;

Replace URL Keywords

Introduction

If an application URL contains a special keyword, then the keyword is replaced when the URL is opened. For example, if the URL is:

bfs:///moneymaker/OS/moneymaker.ptv

The DHCT substitutes its installed OS version for the keyword "/OS/" in the path. So, a DHCT running OS version 3.10 looks for the file **moneymaker.ptv** in the directory **bfs://moneymaker/3.10**. If that directory does not exist, the DHCT strips the last character until it finds a directory that does match or issues an error.

If the file is not found with the replacement, the application tries to find the file based on the following rules:

- If all possibilities of the URL keyword replacement fail, then the original URL is used (the keyword is unchanged)

- If that file does not exist, then it is considered to be a missing file and, therefore, an error

Important: When you register files with applications, such as the moneymaker.ptv file with the BFS application in the above example, you must make sure the directory structure matches the structure defined in the URL. Otherwise, the DHCTs will not find the file you intend for them to load.

Case-Significant Keywords

The various types of case-significant URL keywords and their functions are described in the following table. The following keywords have been updated for this document:

- /CPU/

- /HW/

Note: Slashes (**/**) are required for conversion to take place.

URL Keyword	Converts to...
/CPU/ ***UPDATED***	CPU type running in the DHCT. **/cpu1/** for uSparc processors (all Explorer® DHCTs and Panasonic DHCTs) **/cpu2/** for Mips32 processors (Pace and Pioneer DHCTs) **/cpu3/** for Cisco next-generation platform (NGP) DHCTs **Note:** If the file is not found with the converted URL, then the original URL containing **/CPU/** is used.

/OS/	Converts to the most detailed OS version string.
	
	If the application does not find the file, it eliminates a character and retries.
	
	Example: In OS version A.B.CxNN, x is A, B, or C, and NN is a 1 or 2-digit number. The URL **bfs:///SofaSOFT/OS/SofaINST.ptv** running SARA OS 3.1b2, SARA converts the URL in the following order:
	
	    bfs:///SofaSOFT/os3.1b2/SofaINST.ptv
	    bfs:///SofaSOFT/os3.1b/SofaINST.ptv
	    bfs:///SofaSOFT/os3.1/SofaINST.ptv
	    bfs:///SofaSOFT/os3/SofaINST.ptv
	
	If SARA does not file any of the above files, it uses the original URL (**bfs:///SofaSOFT/OS/SofaINST.ptv**) or displays a black screen.

URL Keyword	Converts to...
/HW/	Type of hardware platform.

Examples:

UPDATED

- Explorer DHCT types
  - 1800s convert to **/1800/**
  - 1850s convert to **/1800/**
  - 2000s and 2000HDs convert to **/2000/**
  - 2010s convert to **/2010/**
  - 2030s convert to **/2100/**
  - 2031s and 2031HDs convert to **/2100/**
  - 2040s convert to **/3200/**
  - 2100s convert to **/2100/**
  - 3030HDs convert to **/2100/**
  - 3040HDs convert to **/3200/**
  - 3100s convert to **/2100/**
  - 3300HDs convert to **/3300/**
  - 4010s and 4010HDs convert to **/4010/**
  - 4640HDCs and 4640HDs convert to **/4640/**
  - 4642HDCs and 4642HDs convert to **/4642/**
  - 4650HDCs and 4650HDs convert to **/4650/**
  - 4652HDCs and 4652HDs convert to **/4652/**
  - 8000s convert to **/8000/**
  - 8010s and 8010HDs convert to **/8010/**
  - 8015s convert to **/8015/**
  - 8300HDs convert to **/8300/**
  - 8400s convert to **/8400/**
  - 8640HDCs and 8640HDs convert to **/8640/**
  - 8642HDCs and 8642HDs convert to **/8642/**
  - 8650HDCs and 8650HDs convert to **/8650/**
  - 8652HDCs and 8652HDs convert to **/8652/**
  - RNG100s convert to **/1500/**
  - RNG150s convert to **/1640/**
  - RNG200s convert to **/8640/**
- Pace DHCT Model 5101 converts to **/Pac5101/**
- Panasonic DHCT Model 2000 converts to **/Pan2000/**
- Pioneer DHCT Model 1300 converts to **/Pio1300/**

If none of the above files are found, SARA uses the original URL containing **/HW/** or displays a black screen.

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.