Chapter 1. Generating Color Mapping Table source and Output Files

To apply color to black and white documents, you must use the following procedure to create a Color Mapping Table Source (**.src**) and Output Files, using the cmt utility on page I.

The following two files should be available in the **usr/lpp/psf/bin** directory on your Infoprint AIX server: **cmt.exe** and **cmt.cfg**. Using the AFP architectural reference cited in the procedure below, you can apply color to existing black and white documents.

The **cmt** utility allows you to create color mappings in a variety of different color modes that are defined through the **ColorSpace** parameter. For example, the **Highlight** value can be used when printing to an IBM Infoprint 4000 printer with an Infoprint Highlight Color Model HC2 Post-Processor (HCPP). For more information on the HCPP, see the IBM Infoprint Hi-Lite Color Printer: Library Catalog at the URL http://www.printers.ibm.com/R5PSC.NSF/Web/hilitem.

In the procedure described below, we create a Color Mapping Table to print an Advanced Function Presentation (AFP) file that contains pie charts as the color green.

You must perform the following tasks from the AIX command line:

1. From the **usr/lpp/psf/bin** directory, specify:

   ```
   cp cmt.cfg piel.cfg
   ```

   This copies the Color Mapping Table configuration file into a file you can customize for your own purposes (in this case, cmtpie.cfg)

2. Specify vi piel.cfg.

   This allows you to edit the configuration file and insert the applicable values to create the appropriate color mapping (whether GOCA to RGB or OCA to CIELAB) table. See the sample **cmt.cfg** configuration file below:

   ```
   # -------------------------------------------------------
    # Required, starts  a Color Mapping Definition.
    # One definition for each Source to Target mapping.
   # -------------------------------------------------------

   # -------------------------------------------------------
    # BeginSourceDef:
    # Required, starts the Source Parameters
   # -------------------------------------------------------

   BeginSourceDef:
   # -------------------------------------------------------
   # ColorSpace:
   # Required, values= OCA | Highlight | GOCA
   # -------------------------------------------------------
   # ColorSpace:

   # -------------------------------------------------------
   # ColorValue:
   # Required, values depend on Color Space
   # -------------------------------------------------------
   # ColorValue:
   ```

```
# ----------------------------------------------------------
# ObjectType:
# Optional, values= ObjArea | ImageData | PTOCData |
# GOGCAData | BCOCAData | AllOCA | Page | Overlay |
# ObjsAll
# default= ObjsAll
# ----------------------------------------------------------
# ObjectType: GOCAData


# ----------------------------------------------------------
# PercentShading:
# Optional, only valid for SourceColorSapce: Highlight,
# values= 0 .. 100, 255 (all percentages),
# default= 100
# ----------------------------------------------------------
# PercentShading:


# ----------------------------------------------------------
# PercentCoverage:
# Optional, only valid for SourceColorSpace: Highlight,
# values= 0 .. 100, 255 (all percentages),
# default= 100
# ----------------------------------------------------------
# PercentShading:


# ----------------------------------------------------------
# PercentCoverage:
# Optional, only valid for SourceColorSpace: Highlight,
# values= 0 .. 100, 255 (all percentages),
# default= 100
# ----------------------------------------------------------


# ----------------------------------------------------------
# EndSourceDef:
# Required, ends the Source Parameters
# ----------------------------------------------------------
EndSourceDef:


# ----------------------------------------------------------
# BeginTargetDef:
# Required, starts the Target Parameters
# ----------------------------------------------------------
BeginTargetDef:


# ----------------------------------------------------------
# ColorSpace:
# Required, values= RGB | CMYK | Highlight | CIELAB
# ----------------------------------------------------------
# ColorSpace:


# ----------------------------------------------------------
# ColorValue:
# Required, values depend on Color Space
# ----------------------------------------------------------
# ColorValue:


# ----------------------------------------------------------
# PercentShading:
# Optional, only valid for TargetColorSpace: Highlight,
# values= 0 .. 100, default= 100
# ----------------------------------------------------------
# PercentShading:


# ----------------------------------------------------------
# PercentCoverage:
# Optional, only valid for TargetColorSpace: Highlight,
```

```
# values= 0 .. 100, default= 100
# -------------------------------------------------------
# PercentCoverage:

# -------------------------------------------------------
# EndTargetDef:
# Required, ends the Target Parameters
# -------------------------------------------------------
EndTargetDef:

# -------------------------------------------------------
# Required, ends a Color Mapping Definition.
# -------------------------------------------------------
# EndMappingDef:
```

For our AFP files, this pie chart appears as a series of horizontal lines. By accessing the chapter on "Graphic primitives and Attributes" in the *Graphics Objects Content Architecture for advanced Function Presentation Reference* (S544–5498–00) manual, we can see that these horizontal lines are created by a Pattern Output Primitive with a hexadecimal value of `'0B'`(11).

To find how to turn these horizontal lines into a shade of green and we are using a **ColorSpace** value of RGB, ensure that you specify a low value for red (10), a high value for green (250), and a value under 50 for blue (40) to provide a clear contrast.

3. Once you have finished editing the `pie1.cfg` file, save the file.
4. To generate the Color Mapping Table source (**.src**) file that will be used when you submit the job for printing, run the **cmt** Utility as the input file (**-i** flag):

   `cmt -i pie1.cfg -o pie1.out`This command produces a **pie1.out** output file.
5. To verify your color mapping values, respecify the **cmt** Utility, using the newly created **pie1.out** as the input file and **pie1.src** as the input file:

   `cmt -i pie1.out -o pie1.src`
6. Before you attempt to use this color mapping table to submit a job to Infoprint Manager, verify that the source file contains the intended values. In this case, the **pie1.src** file should resemble the following, where the source definition represents the input file (in this case AFP) that you are converting to the target definition (an RGB color value of green):

   ```
   BeginMappingDef:
   BeginSourceDef:
   ColorSpace: GOCA
   ColorValue: 11
   ObjectType: GOCADATA
   EndSourceDef:

   BeginTargetDef:
   ColorSpace: RGB
     ColorValue: 12 252 42
     EndTargetDef:
   EndMappingDef:
   ```
7. Once you have verified the contents of the source file, see Using a Color Mapping Table to Submit Jobs to Infoprint Manager on page 24.

Chapter 2. Using a Color Mapping Table Source and Output Files

To submit a job using the color mapping tables for spot color, you must ensure that you also specify a resource-context attribute so that the server knows the location of the color mapping table. Once you have configured a Color Mapping Table, you must have defined a logical destination using the Infoprint Color AFP Template (named `prt1` for this example) to which you can send the job. You can submit jobs through either of the following methods.

Submitting Jobs through the AIX Command Line

Once the logical destination has been defined, you can submit a job to an Infoprint Manager printer by specifying the following from the command line:

Command Values	Meaning
`pdpr -d prt1`	Print Command with logical destination name.
`-x job-name=report1`	Name of the AFP file you submit for printing.
`-x resource-context=/usr/lpp/psf/cmt/`	Explicit path name where the AFP file (in this case `report1`), resides on your Infoprint AIX server.
`-x color-mapping-table=cmtpie.out`	Color Mapping Table that you created for printing this file.
`/usr/lpp/psf/cmt/goca.afp`	Explicit pathname where the input file resides.

Submitting Job through the Advanced Server GUI

You can submit a job with a Color Mapping Table through Infoprint Manager Advanced Configuration GUI. This method is valuable if you are using the same color mapping table for a long run of print jobs. If you must switch between Color Mapping Tables, it might be easier to specify the mapping table from the command line (as shown above).

1. From the **Server** window, double-click on the server object to open the **Queues** and **Servers Actual Destinations** views.

2. From the **Servers Actual Destinations** view, drag and drop the enable action icon (a yellow light bulb) over the appropriate printer object (in this case, `eldoplus`, as shown below).

Servers mpc

Template Area

Types Actual Destination Templates   8 Objects

AIX   PSF AIX attached

Actions   Work Area

Servers   1 Objects

mpc

Queues (mpc)   1 Objects

mpc-default-queue

Server's Actual Destinations (mpc)   ts

eldoplus   mip24   WD1

View Controls   Display Controls

Information Area

Exit Select Servers... Event Log Preferences   Help
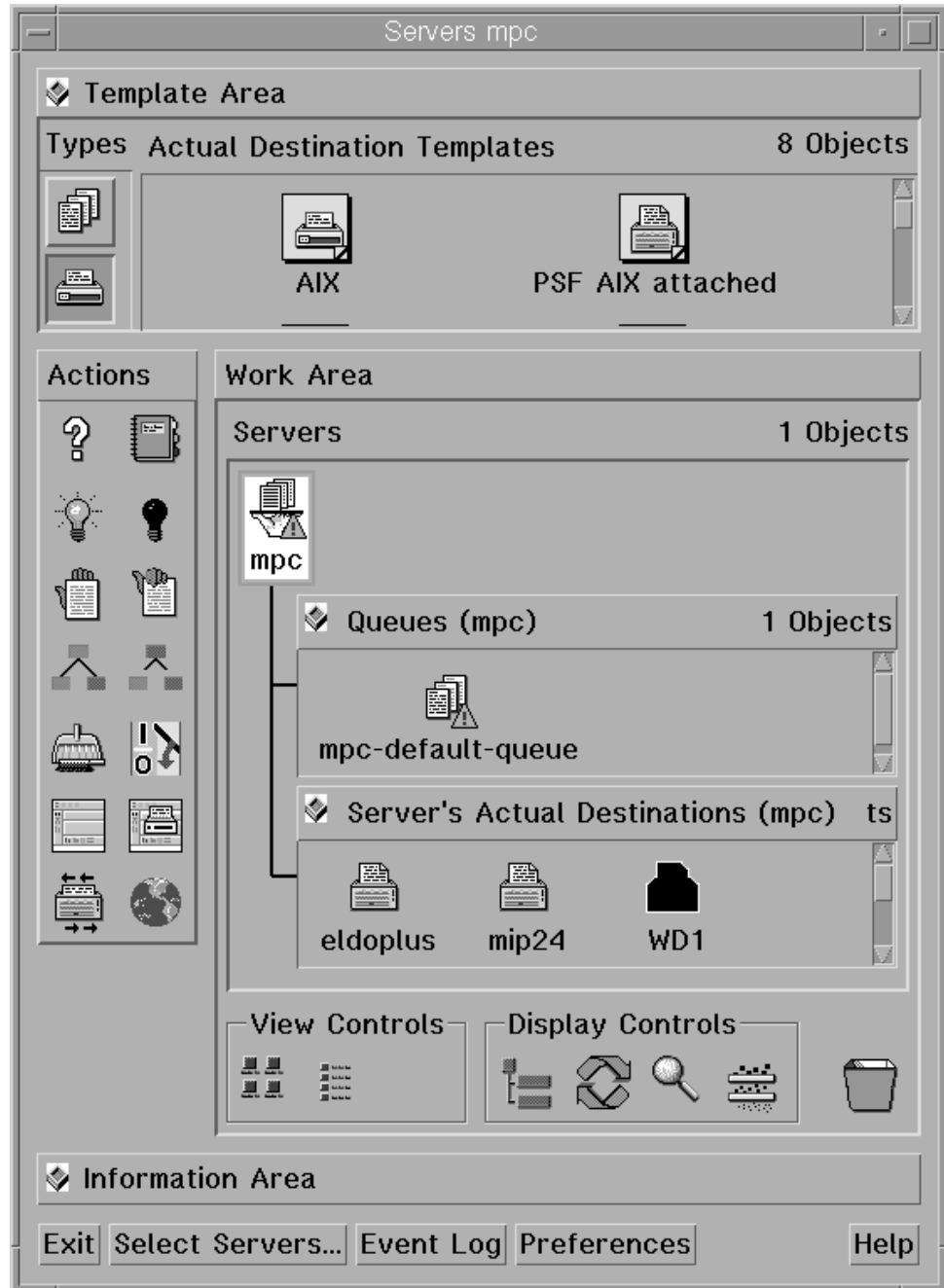
3. Ensure that both the Color Mapping Table (`pie1.out`) and the resource context
   (`/usr/lpp/psf/cmt/`) have been specified in the **Printer Notebook view**, as

shown below:
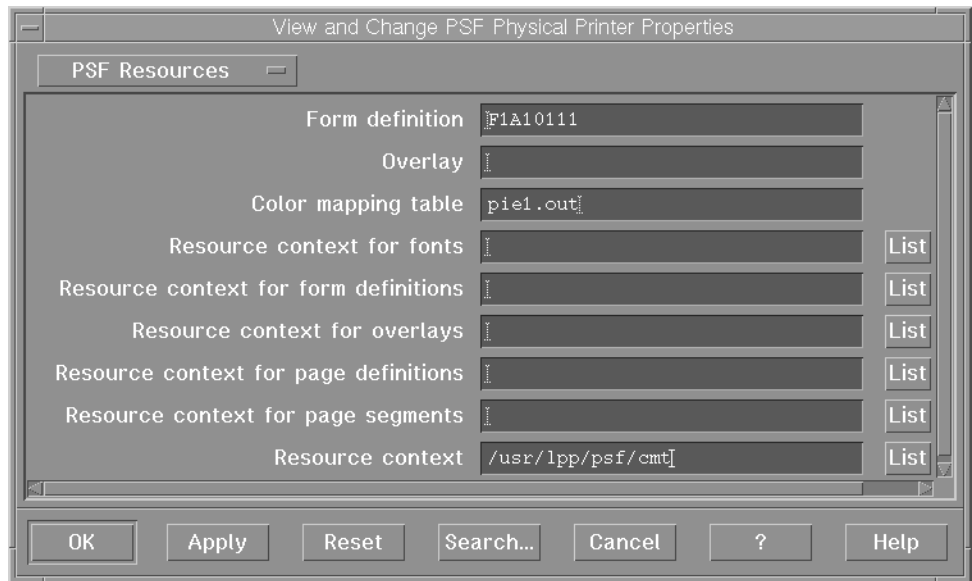
4. Submit your job to Infoprint Manager, using either the command line or the Infoprint Select client.

Chapter 3. cmt Utility: Builds Color Mapping Table source and object files

Syntax

cmt {**-i** *input file*}

[**-o** *output file*]

[**-n** *internal CMT name*]

[**-t**]

Description

cmt is the Color Mapping Table Utility, generates color mapping table source and object files. if the input file is an object color mapping table, **cmt** generates a source output file; and if the input file is a source file, **cmt** generates an object file. Object color mapping tables are used to map OCA (Object Content Architecture) colors and fills to printer specific colors.

Flags

The cmt utility uses the following flags:

-i   The file name and input file. The input file can be a source or object file. When you use the **cmt** utility, you must specify this flag.

-o   The file name of the output file. If this flag is not specified, **stdout** is used. This is an optional flag.

-n   The name that appears on the MO:DCA Begin Object Container (BOC) structured field. This is an optional flag.

-t   Use this flag to turn on trace. This is an optional flag.

Color Mapping Table Source File

The source file describes the contents of the color mapping table object file.

Each mapping definition of one source color or fill to a target color is bracketed by the keywords BeginMappingDef: and EndMappingDef: The **cmt** utility requires one mapping definition for each source target mapping.

Each source definition with a mapping definition is bracketed by the keywords BeginSourceDef: and EndSourceDef:. The **cmt** utility requires one source definition for each mapping definition.

Valid keywords and values for a source definition follow:

ColorSpace
You must specify **OCA**, **Highlight**, or **GOCA**

ColorValue

You must specify a value that depends on the value specified for **ColorSpace:**

- When **ColorSpace=OCA, ColorValue** is a one string component of the following:
  - Default
  - Blue
  - Red
  - Pink
  - Green
  - Cyan
  - Yellow
  - Black
  - Brown
  - Medium

Note: The binary representation for all **OCA** colors are supported by the **cmt** utility.

- When **ColorSpace=Highlight**, the **ColorValue** has one component, integer 0 through 3. For example, **ColorValue: 2**.
- When **ColorSpace=GOCA**, the **ColorValue** has one component, integer 0 through 16 or 64. For example, **ColorValue: 13**.

Each target definition within a mapping definition is bracketed by the keywords BeginTargetDef: and EndTargetDef:. The cmt utility requires one target definition within each mapping definition. Valid keywords and values for a target definition follow:

ColorSpace

You must specify **RGB, CMYK, Highlight**, or **CIELAB**.

ColorValue

You must specify a value determined by the value specified by **ColorSpace** as follows:

- When **ColorSpace=RGB**, the **ColorValue** has three components from 0 through 255. For example, 33 167 247.
- When **ColorSpace=CMYK**, the **ColorValue** has four components from 0 through 255. For example, 135 26 37 255
- When **ColorSpace=CIELAB**, the **ColorValue** has three components with the first integer from 0 through 100 and the second and third integers from -127 through 127. For example, 65 -120 111.

PercentShading

Valid values are integers 0 through 100. This optional value defaults to 100.

PercentCoverage

Valid values are integers 0 through 100. This optional value defaults to 100.

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