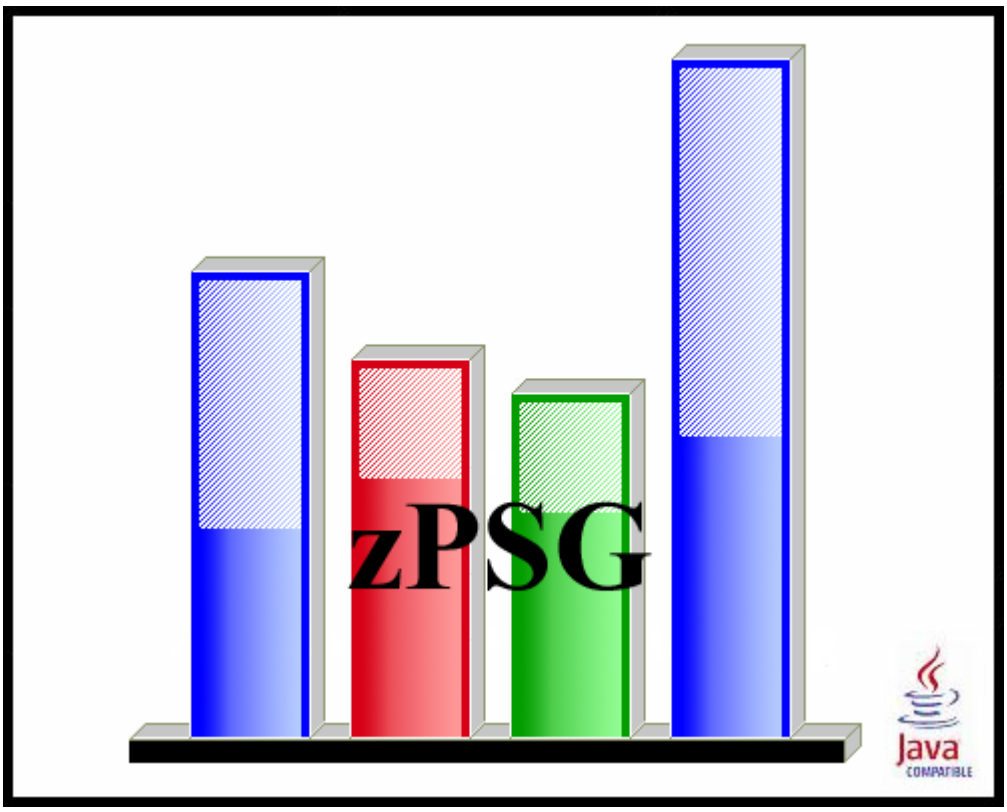
Processor Selection Guide
for
IBM System z

zPSG
User's Guide
for
Content Manager



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Content Manager

z/OS

This tool provides estimates of System z processor capacity for applications using Content Manager (CM) V8.4.3 on z/OS for System z.

Content Manager belongs to a family of Enterprise Content Management products that are available from IBM.

IBM® Content Manager for z/OS® provides a flexible system that you can use to manage unstructured content according to the needs of your business. The components of IBM Content Manager for z/OS work together to solve your business needs on a z/OS operating system.

The IBM Content Manager solution includes:

- Support for multiple operating systems
- Client options
- Browser access
- Support for almost every kind of business document
- Administration tools for defining users and user privileges
- Efficient methods for keeping the system secure
- Features for managing the flow of work through the system
- »Text search support«

How To Do a CM Sizing

When you select CM sizing support from the ***Product Selection*** window to begin a new sizing, the ***CM Application Definition*** input window is presented.

The general approach to sizing CM applications on System z is to determine which of the pre-defined activities best represent the customer's application and provide an average activity execution rate per second during a peak interval for each of these. Refer to the *CM Application Definition* window to see the list of activities that can be included in a sizing. Default values are provided for each of the input fields.

The usual span of time for a peak interval is 15 minutes, and you want to specify the average transactions per second for that interval. Note that if you have statistics for the average transaction rate for prime shift or for a day or week, you might want to apply a peak-to-average multiplier factor to averages for long periods of time to arrive at an average rate for a 15 minute interval.

To see results, click on the **Summary Report**, **CPU Utilization** or **Transaction Rate** buttons in the Reports and Capacity Projections section of the window.

The application window images shown in this user guide have been provided as a representation of the windows the user will see when using **zPSG** but there may be minor differences from the current version of **zPSG,** such as version numbers and dates.

CM Component Descriptions

Below are the detailed descriptions of the components supported in this tool

Library Server

The library server is the component of a Content Manager for z/OS® system that provides access control and indexing services for objects that are stored on resource managers.

The library server processes requests (such as update or delete) from clients and maintains data integrity among all of the components in the Content Manager for z/OS system.

The library server controls user access to objects that are stored on any resource manager in the system. The library server relies on a relational database management system such as DB2® for z/OS to manage content on z/OS.

You can access the library server using the structured query language (SQL) or by using a client to access the library server.

An IBM® Content Manager system requires one library server, which can run on the z/OS, AIX®, Linux®, Linux on System z®, Sun Solaris, and Windows® operating system.

The library server must have the IBM DB2 Universal Database™ installed on the same system as the library server.

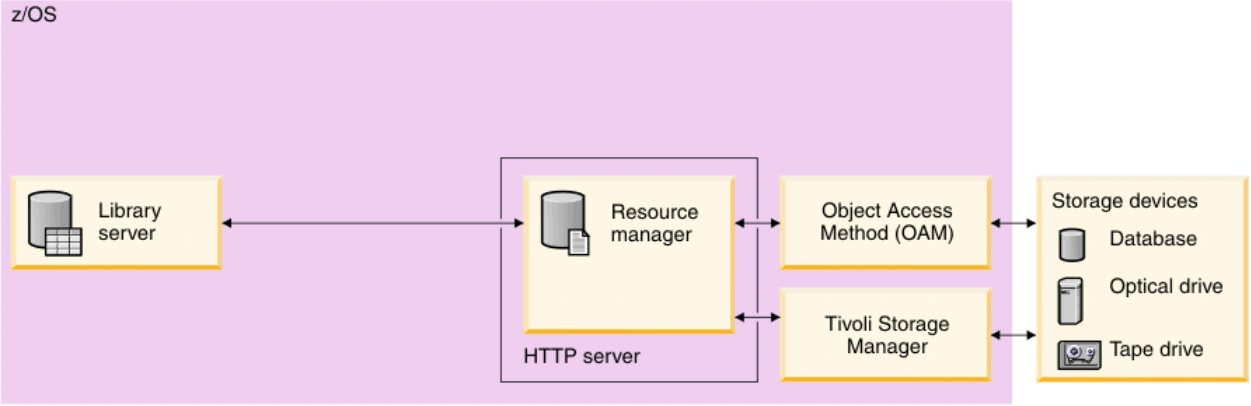
Resource Manager

The resource manager manages the objects that are stored in your Content Manager for z/OS® system.

The resource manager stores objects for IBM® Content Manager. The client finds the object in the library server. The library server then sends the information needed to retrieve the object to the client. The client builds an HTTP request and sends it to the resource manager where the object is located. The resource manager then sends the object to the requesting client.

A single library server can support multiple resource managers. Content can be stored on any of these resource managers. This diagram shows the resource manager and its relationship to the library server.

Figure 1. The resource manager and library server on a z/OS system

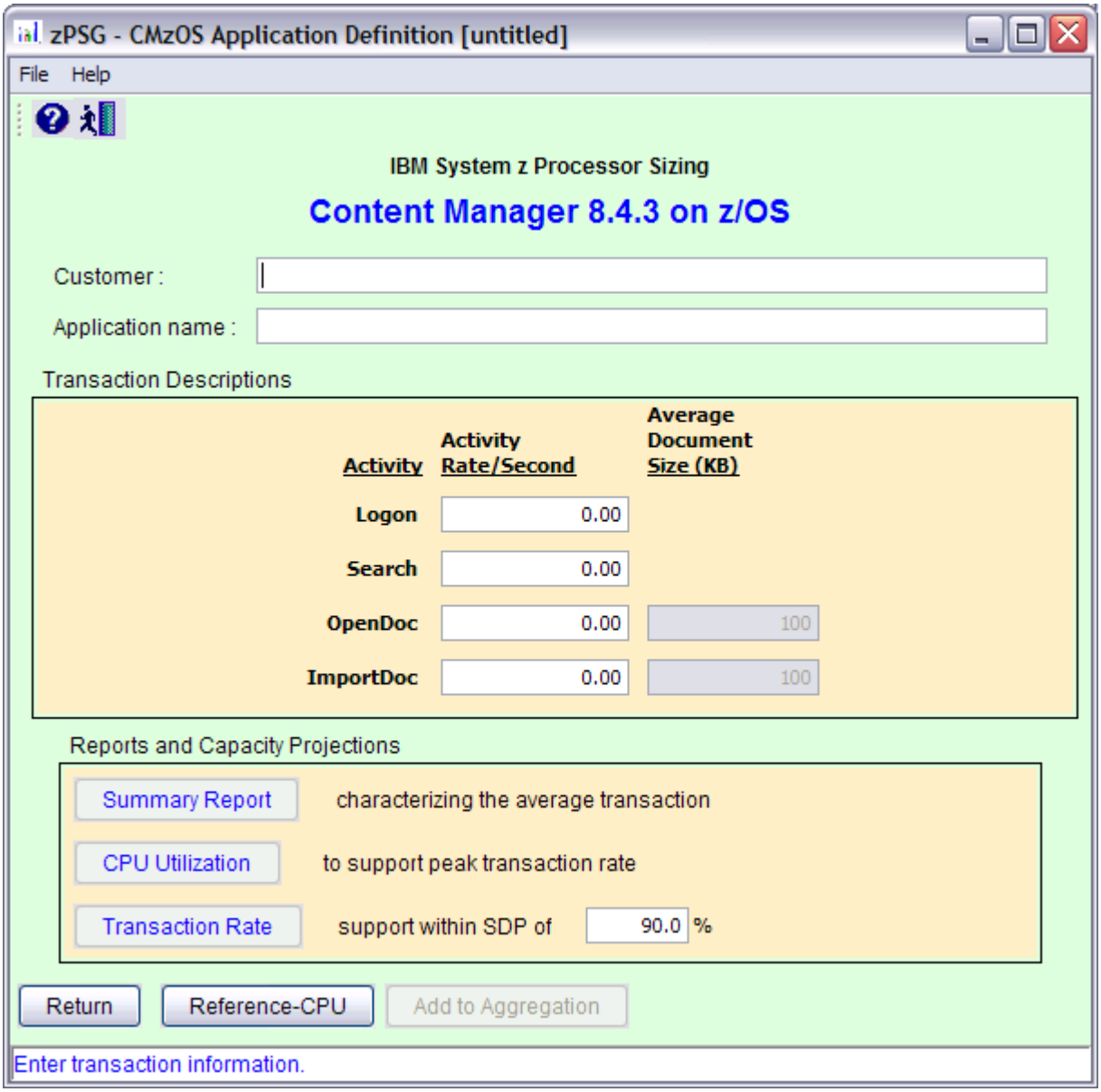


For the purposes of this sizing, the resource manager is on the same z/OS system as the library server. A resource manager can be associated with only one library server.

You can store multiple copies of objects on the same resource manager or separate resource managers (for greater reliability) and replicate copies of the object at the same time that you store the object. You plan which objects to replicate, how often to perform the replication, and when to stop the replication.

Resource managers can be distributed across networks for easy user access.

CM Application Definition



This window is displayed when the **PSG** button is clicked on the ***Product Selection*** window when **Content Manager** has been selected for z/OS.

Note: An activity rate per second greater than zero must be specified for at least one activity to get a sizing estimate.

Please note that the CM version supported for z/OS is 8.4.3.

Description of Input Fields

Menu bar

File

New	Start a new study. Sets all fields to initialization values.
Load	Load a previously saved study
Save	Save the current study
Save as	Save the current study as a new file
Exit (Ctrl-E)	Exit window and return to the ***Product Selection*** window
Exit zPSG	Terminate **zPSG** execution (Ctrl-Q). Exit zPSG can also be invoked from the Exit zPSG button on the tool bar.

Help

Context Help (F1)	Help for this window
About zPSG	Product information

Toolbar

? button	Click this button to go to Help for this window.
Exit zPSG button	Click this button to terminate **zPSG** execution.

Customer =

Input field, for documentation purposes, not required. If you want to save a copy of the sizing estimate, you can use this field to document which sizing it is.

Application name =

Input field, for documentation purposes, not required.
If you want to save a copy of the sizing estimate, you can use this field to document which sizing it is.

Input Fields and Buttons

Activity Rate/Second

Specify an activity rate per second value for each of the activities that should be included in the sizing. Specify a value of zero if the activity should not be included in the sizing. The default value for each of the activities is zero.

Average Document Size (KB)

Specify the average document size in KB for each of the scenarios that should be included in the sizing. This is currently a fixed field set to 100 KB.

Reports and Capacity Projections

This section provides buttons to view output windows with summary reports and capacity projections.

Summary Report button

Click this button to view a summary of the input assumptions for the sizing and a breakdown of the CPU/transaction among the transaction profiles included in the sizing.

CPU Utilization button

Click this button to see an output window with estimates of processor utilization for all System z processors supported in zPSG.

Transaction Rate button

Click this button to see an output window with estimates of transaction rates that can be supported on all System z processors supported in zPSG. You can also see the transaction rates that can be supported within a Saturation Design Point (SDP) specified for the processors.

SDP %

Description

Input field, numeric, valid range is 1 to 100.
SDP stands for Saturation Design Point. This is a classic capacity planning concept which allows you to examine the amount of workload than can be supported in less than the full capacity of the processor model. It applies to the Transaction Rate output window and enables you to determine how much work can fit into a processor that is already being used for other applications.

Default

The default is 90%.

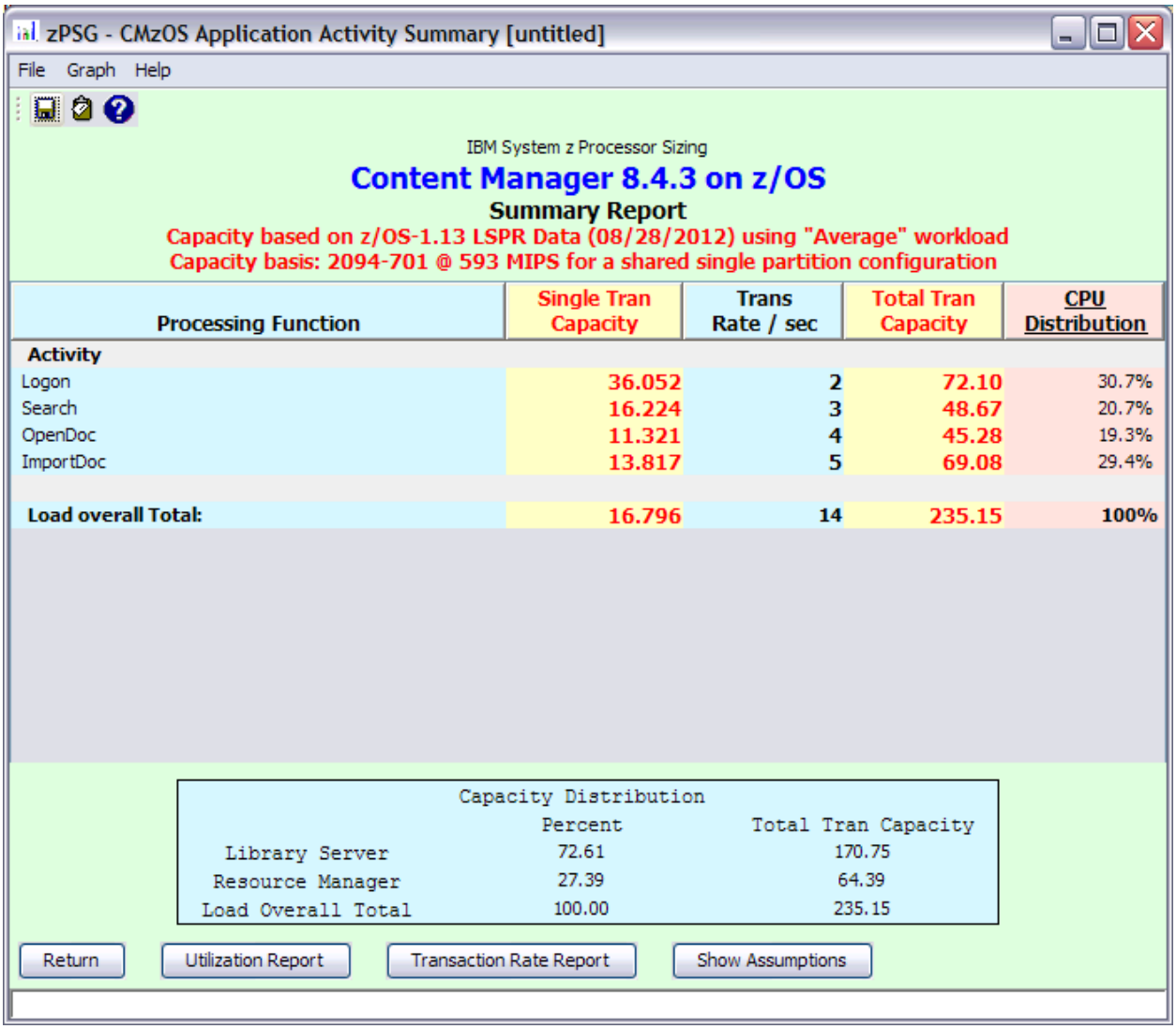
Return button

Click this button to return to the ***Product Selection*** window.

Reference-CPU button

Click this button to go to a window to change the System z processor used as a basis for capacity ratings. See the Reference-CPU section in the zPSG User's Guide for information about this setting.

CM Application Activity Summary



This window is displayed when the **Summary Report** button is clicked on the primary ***CM Application Definition*** window. It shows a breakdown of the CPU per transaction for the various pre-defined activities included in the sizing.

Menu bar

File

Output	Write contents to a flat (PRN) file.
Copy	Write contents to Window's clipboard
Graph	Generates a pie chart showing the distribution of application activity

Help

Context Help (F1)	Help for this window
About zPSG	Product information

Toolbar

1st button
Click this button to send sizing information to a PRN file for processing outside of zPSG.

2nd button
Click this button to send sizing information to the clipboard, so that you can copy it into a note or other document.

? button
Click this button to go to Help for this window.

Processing Function column

Lists the pre-defined scenarios available on the primary ***CM Application Definition*** window.

Single Tran Capacity column

Reflects the amount of CPU (as represented by the Capacity Rating) for each activity, and at the bottom for all transactions.

Trans Rate / sec column

Reflects the number of activities completed per second for each of the pre-defined activities as specified on the ***CM Application Definition*** window.

Total Tran Capacity column

Reflects the amount of CPU (as represented by the Capacity Rating) for each activity multiplied by the transaction rate specified in the ***Trans Rate / sec*** column, and at the bottom for all transactions.

CPU Distribution column

Shows the percentage of the CPU/transaction used by each activity.

Capacity Distribution

Shows the distribution of total capacity between the Library Server and the Resource Manager.

Push Buttons

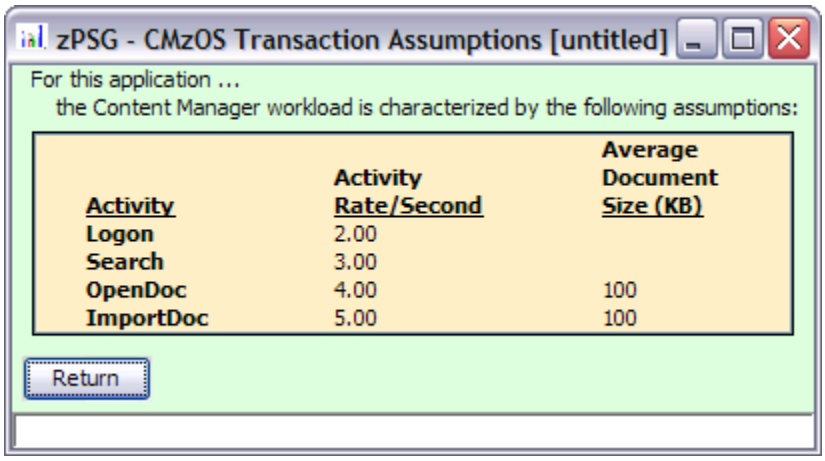
Click the **Return** button to return to the primary ***CM Application Definition*** input window.

Click the **Utilization Report** button to go to the ***CM Processor Capacity Projections - Processor Utilization*** output window.

Click the **Transaction Rate Report** button to go to the ***CM Processor Capacity Projections - Transaction Rate Supported*** output window.

Click the **Show Assumptions** button to see a list of the assumptions for the sizing in the ***CM Application Transaction Assumptions*** window.

CM Transaction Assumptions

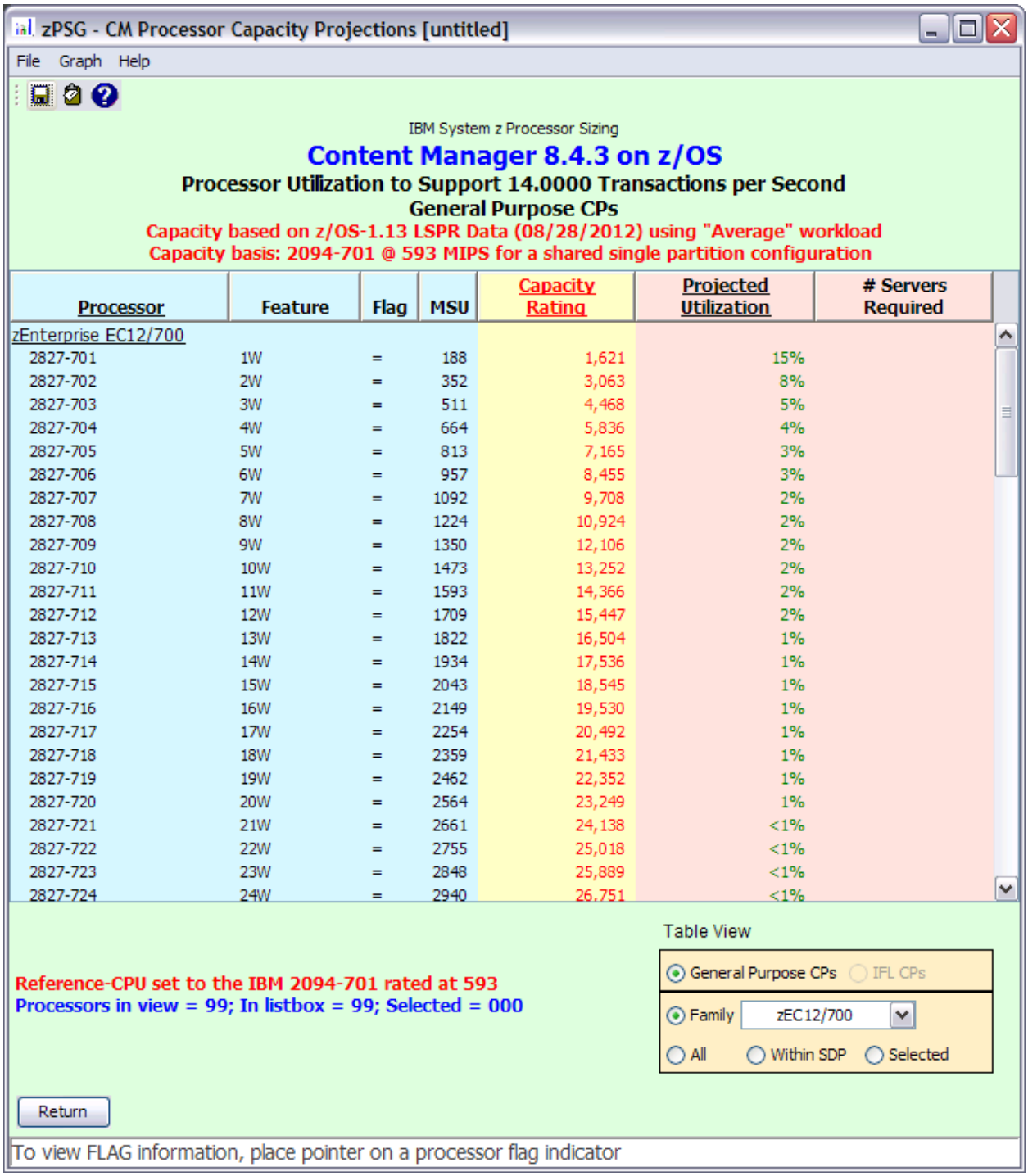


This window is displayed when the **Show Assumptions** button is clicked on the ***CM Application Activity Summary*** window.

All assumptions as listed will be included when generating output for the ***Summary*** window.

CM Processor Utilization

CM Processor Capacity Projections



This window is displayed when the **CPU Utilization** button is clicked on the ***CM Application Definition*** window or the **Utilization Report** button is clicked on the ***CM Application Activity Summary*** window.

Menu bar

File

Output	Write report contents to a flat (PRN) file.
Copy	Write report contents to Window's clipboard

Graph (for processors currently selected in table)

Capacity	Generate bar graph depicting capacity values
Utilization	Generate bar graph showing utilization on selected processors

Help

Context Help (F1)	Help for this window
About zPSG	Product information

Toolbar

1st button
Click this button to send sizing information to a PRN file, for processing outside of zPSG.

2nd button
Click this button to send sizing information to the clipboard, so that you can copy it into a note or other document.

? button
Click this button to go to Help for this window.

Table

***Processor* column**
A list of all processor models supported in zPSG

***Feature* column** **For z/OS & Linux**
Using the General Purpose CPs option under Table View, a designation of how many general purpose processing engines (CPs) for this entry. For example, 4W ("W" is short for "way") indicates 4 CPs or engines. Also see ***Flag*** column below.

***Feature* column** **For Linux only**
Using the IFL CPs option under Table View, a designation of how many IFL engines for this entry. For example, 4W IFL ("W" is short for "way") indicates 4 IFL engines. Also see ***Flag*** column below.

***Flag* column**
If you place your cursor on a row in this column, an explanatory message about the System z model designation and the number of CP or IFL engines for the entry.

***MSU* column**
Only for the General Purpose CPs Table View (does not apply to IFLs). Shows the MSU rating assigned to the number of CP engines for this entry.

Capacity Rating **column**
The capacity ratings reflect the relative capacity of each processor table entry to the reference-CPU and its capacity rating assigned on the Reference-CPU window. When **zPSG** is started the reference-CPU will be set to a 2094-701 (a z9 EC/700 processor with 1 general purpose CP) with a capacity rating of 593 MIPS.

Projected Utilization **column**
Shows the estimated CPU% for each processor entry in the table, based on the transaction rate(s) and input parameters specified for the pre-defined transactions. This is the primary output for a sizing.

***Servers Required*** **column**
If the estimated CPU% is greater than 100% (and therefore cannot fit on the processor), this column reflects the number of these models that would be needed to accommodate the load.

Table View Options Box

Click a radio button in each section to customize the processor entries shown in the table:

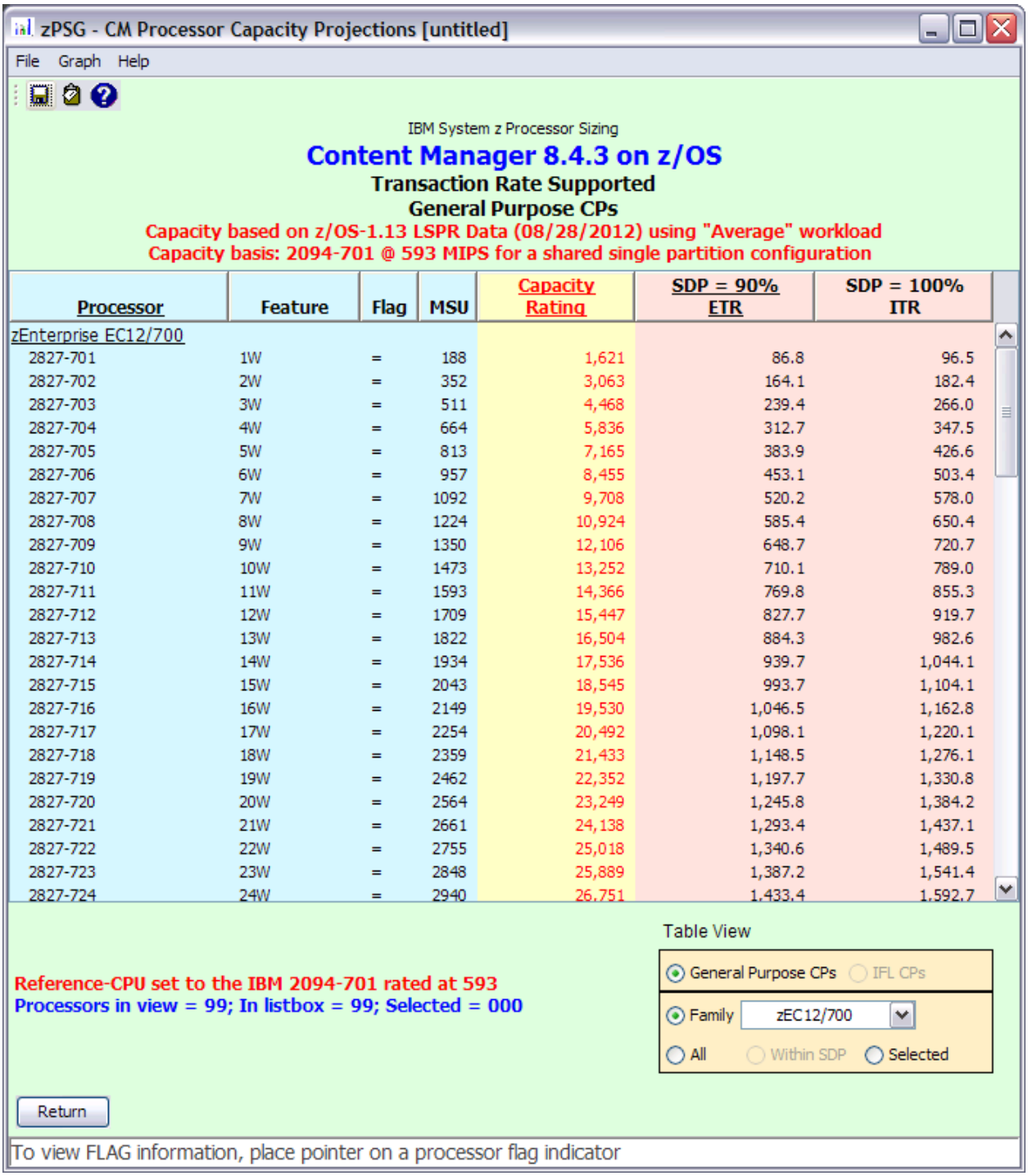
- **General Purpose CPs** shows entries with some number of general CP engines
- **IFL CPs** shows entries with some number of IFL engines (for Linux only)
- **Family** shows all processor models for the family selected (Default)
- **All** shows all processor models supported in zPSG
- **Within SDP** shows all models that can accommodate the load within the Saturation Design Point
- **Selected** shows only selected models. Models are selected by clicking on the entry while holding down the Ctrl key on your keyboard.

Return button

Click this button to return to the primary ***CM Application Definition*** window.

CM Transaction Rate Supported

CM Processor Capacity Projections



This window is displayed when the **Transaction Rate** button is clicked on the ***CM Application Definition*** window or the **Transaction Rate Report** button is clicked on the ***CM Application Activity Summary*** window.

Menu bar

File

Output	Write report contents to a flat (PRN) file.
Copy	Write report contents to Window's clipboard

Graph (for processors currently selected in table)

Capacity	Generate a bar graph depicting capacity values
ETR	Generate bar graph showing transaction rate supported at SDP
ITR	Generate bar graph showing maximum transaction rate supported

Help

Context Help (F1)	Help for this window
About zPSG	Product information

Toolbar

1st button
Click this button to send sizing information to a PRN file, for processing outside of zPSG.

2nd button
Click this button to send sizing information to the clipboard, so that you can copy it into a note or other document.

? button
Click this button to go to Help for this window.

Table

***Processor* column**
A list of all processor models supported in zPSG

***Feature* column** **For z/OS & Linux**
Using the General Purpose CPs option under Table View, a designation of how many general purpose processing engines (CPs) for this entry. For example, 4W ("W" is short for "way") indicates 4 CPs or engines. Also see **Flag** column below.

***Feature* column** **For Linux only**
Using the IFL CPs option under Table View, a designation of how many IFL engines for this entry. For example, 4W IFL ("W" is short for "way") indicates 4 IFL engines. Also see **Flag** column below.

***Flag* column**
If you place your cursor on a row in this column, an explanatory message about the System z model designation and the number of CP or IFL engines for the entry.

***MSU* column**
Only for the General Purpose CPs Table View (does not apply to IFLs). Shows the MSU rating assigned to the number of CP engines for this entry.

***Capacity Rating* column**
The capacity ratings reflect the relative capacity of each processor table entry to the reference-CPU and its capacity rating assigned on the Reference-CPU window. When **zPSG** is started the reference-CPU will be set to a 2094-701 (a z9 EC/700 processor with 1 general purpose CP) with a capacity rating of 593 MIPS.

SDP= xx % -- ETR column
Shows the transaction rate for the application that can be supported within the Saturation Design Point specified on the ***CM Application Definition*** window (the default SPD is 90%). ETR stands for External Throughput Rate, which is a standard System z term for transaction rate.

SDP=100% -- ITR column
Shows the transaction rate for the application that can be supported at 100% CPU. ITR stands for Internal Throughput Rate, which is a standard System z term indicating the throughput that can be achieved at 100% CPU. ITR is computed by dividing the ETR by the CPU% (expressed as a decimal). This is the way to correctly rate the processor capacity of each entry in the processor table for this workload (as opposed to MIPS ratings, which are generally erroneous).

Table View Options Box

Click a radio button in each section to customize the processor entries shown in the table:

- **General Purpose CPs** shows entries with some number of general CP engines
- **IFL CP's** shows entries with some number of IFL engines (for Linux only)
- **Family** shows all processor models for the family selected (Default)
- **All** shows all processor models supported in zPSG
- **Within SDP** shows all models that can accommodate the load within the Saturation Design Point
- **Selected** shows only selected models. Models are selected by clicking on the entry while holding down the Ctrl key on your keyboard.

Return button

Click this button to return to the primary ***CM Application Definition*** window.

CM Sizing Assistance

Here are instructions for accessing the System z questionnaire and submitting CM sizing requests to Techline. Note that on the Techline websites there are sizing questionnaires for distributed platforms in addition to System z questionnaires. Be sure to use System z questionnaires for System z sizing requests. The questions and sizing methodologies are different from distributed platforms.

For IBMers:

1. Obtain the latest copy of the CM sizing questionnaire for System z from the following website:
   - http://w3-03.ibm.com/support/techline/sizing/swsz.html
2. Submit a sizing request to Techline using the instructions found in the sizing questionnaire.

For Business Partners:

1. Obtain the latest copy of the CM sizing questionnaire for System z via:
   - Phone: Call PartnerLine at 1-800-426-9990 (US and Canada)
   - Email: pwcs@us.ibm.com
   - Online: http://www.ibm.com/partnerworld/techline
2. Submit a sizing request to Techline using the instructions found in the sizing questionnaire.