IMS HP Sysgen Tools

Dynamically Manage and Alter IMS Sysgen Resources

Highlights

- Dynamically add or alter IMS Database, Program, Transaction, and Fast Path Routing Codes
- Create IMS Resource Update Lists to install IMS system changes
- Validate IMS system changes before they are implemented
- Provides an IMS System Generation utility that performs significantly faster than standard IMS sysgen program
- Reverse engineer existing IMS system resources in the IMS MODBLKS and RESLIB data sets to create IMS system resource definitions
- Creates a searchable Historical Log of all IMS sysgen changes that can be used for backout purposes
- Program Number: 5655-P43

IMS™ is IBM's premier transaction and hierarchical database management system. IMS was designed for high availability, superior performance, growth and capacity, and full database integrity. The ability to operate and manage this highly complex IMS system and database environment determines the Total Cost of Operation (TCO). The IBM® IMS Tools lowers TCO by equipping IMS system programmers and IMS database administrators (DBAs) with the facilities they need to effectively monitor and manage this mission-critical environment. The IBM IMS Tools provide automation, validation, and auditing of all database and transaction management activities.

The *IMS High Performance Sysgen Tools (IMS HP Sysgen Tools)* allows IMS sysgen application resources to be altered dynamically. The tool allows a user to add, update, and delete IMS database, program, transaction, and Fast Path route codes. The *IMS HP Sysgen Tools* provides an IMS Generation utility that is significantly faster than the standard IMS utility. The tool allows resource changes to be batched together in Resource Update Lists that can be verified for correctness prior to execution. A searchable historical log is maintained for all IMS resource changes. Using this historical record of changes, the user can back out changes and restore resource definitions to their original state. The *IMS HP Sysgen Tools* include a number of useful utilities to manage IMS sysgen resources, too.

IMS High Performance Sysgen

The *IMS HP Sysgen Tools* product is a comprehensive IMS System Generation maintenance solution. It allows users to add, delete, and update IMS database, program, transaction, and IMS Fast Path route code resources. There are several IMS generation processes including the NUCLEUS generation for system resources, the CTLBLKS generation for communications resources, and the MODBLKS generation for application resources. The *IMS HP Sysgen Tools* provides all of the functions required to modify and build the resources required by the IMS product.

IMS HP Sysgen User Interfaces

The *IMS HP Sysgen Tools* uses an ISPF user interface. The functions can be performed against one or more IMS systems. The resources can also be collected and submitted using an IMS Batch program. When the target IMS system is on a different LPAR, the user can start the *IMS HP Sysgen Tools* program on the other LPAR using APPC/MVS.

IMS HP Sysgen Primary Functions

The *IMS HP Sysgen Tools* product provides all of the necessary functions to support IMS sysgen processing from the main ISPF screen as shown in Figure 1.

Figure 1: IMS HP Sysgen Tools Main ISPF Screen

VIEW Resources

The *IMS HP Sysgen Tools* provides the VIEW Resource (Option 1) function to display the current IMS resource definitions or the resources defined in the IMS MODBLKS data set. The resources are shown with all of their attributes as shown in Figure 2.

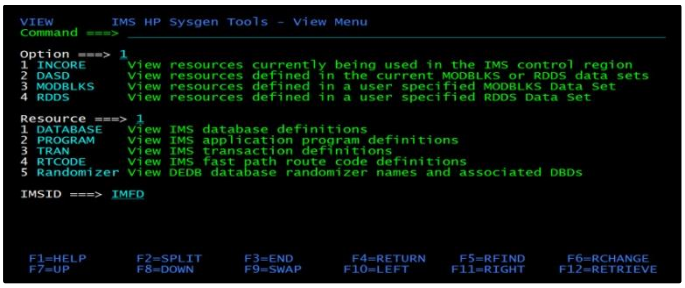

Figure 2: IMS HP Sysgen VIEW Resources (Option 1)

EDIT and VERIFY Update Lists

The *IMS HP Sysgen Tools* uses the EDIT function (Option 2) to create Resource Update Lists as shown in Figure 3.

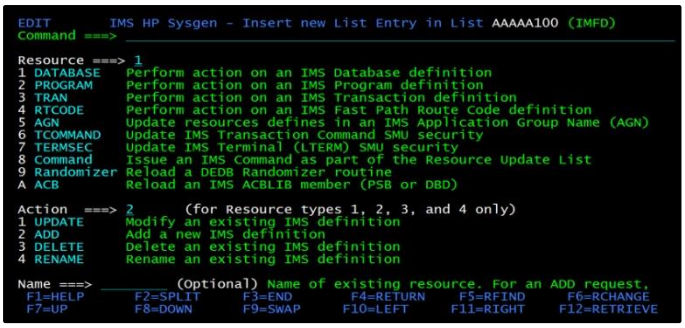

Figure 3: IMS HP Sysgen EDIT Function (Option 2)

These lists show the resources that will be added or deleted from one or more IMS system simultaneously. The Resource Update List can be created in advance and used at a later point in time. The user can create multiple Resource Update Lists to provide incremental changes to the IMS system resources. The Resource Update List can be installed on a single IMS system or on a group of IMS systems and the *IMS HP Sysgen Tools* uses Local or Global IMS Online Change accordingly. The VERIFY function (Option 3) can check that the Resource Update Lists are correct before they are installed as shown in Figure 4.

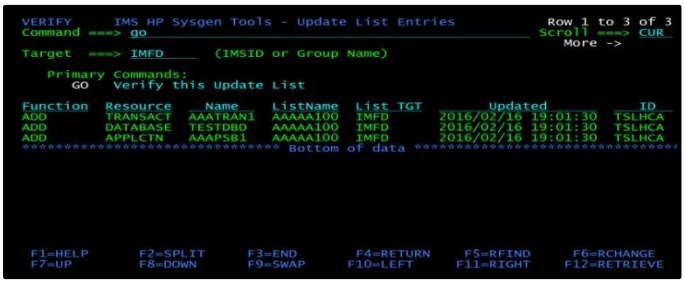

Figure 4: IMS HP Sysgen VERIFY Function (Option 3)

INSTALL Update Lists

The *IMS HP Sysgen Tools* INSTALL function (Option 4) implements the changes outlined in the Resource Update Lists as shown in Figure 5.

Figure 5: IMS HP Sysgen INSTALL Function (Option 4)

VALIDATE IMS Stage 1 Source Code

The *IMS HP Sysgen Tools* VALIDATE function (Option 5) provides syntax checking of the IMS Stage 1 source code to allow the user to find errors in the code before it is executed as shown in Figure 6.

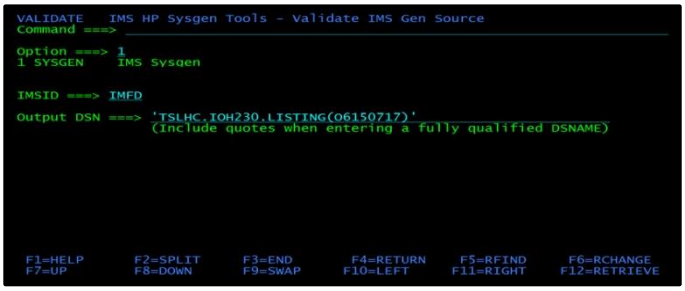

Figure 6: IMS HP Sysgen VALIDATE Function (Option 5)

FASTGEN IMS Sysgen

The *IMS HP Sysgen Tools* FASTGEN function (Option 6) performs an IMS MODBLKS sysgen in a fraction of the time used by the IMS sysgen or LGEN process. It can run as a Batch job or from the *IMS HP Sysgen Tools* ISPF interface as shown in Figure 7.

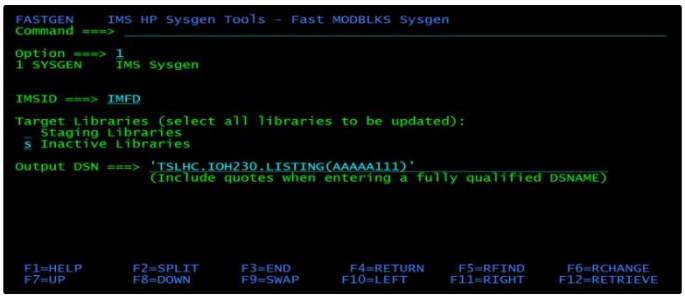

Figure 7: IMS HP Sysgen FASTGEN Function (Option 6)

REVERSE Engineer IMS Stage 1 Source

The *IMS HP Sysgen Tools* REVERSE function (Option 7) reads the IMS MODBLKS data set and provides reverse engineering to create the IMS sysgen source code. This function is shown in Figure 8.

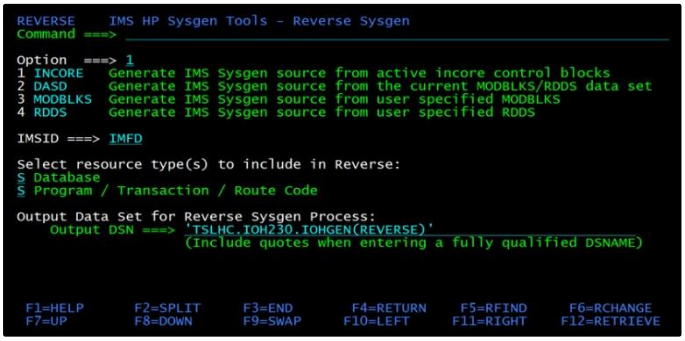

Figure 8: IMS HP Sysgen REVERSE Function (Option 7)

HISTORY Log of IMS Sysgen Changes

The *IMS HP Sysgen Tools* HISTORY function (Option 8) allows the user to search a historical log that is maintained by the product. This log keeps track of the date and time of all resource updates and the Userid that made the changes as shown in Figure 9.

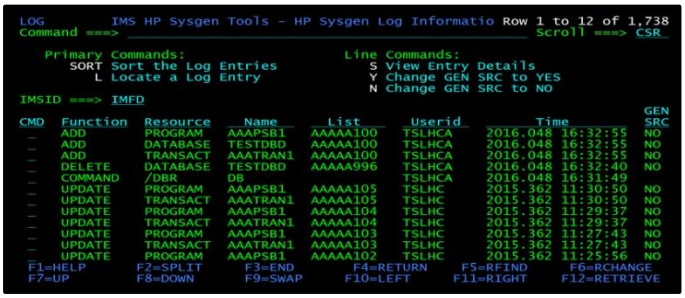

Figure 9: IMS HP Sysgen HISTORY Function (Option 8)

The changes in the log can also be backed out to restore the resources to their original state. The entries in the log can be converted into IMS Stage 1 sysgen macro definitions for future IMS sysgens as shown in Figure 10.

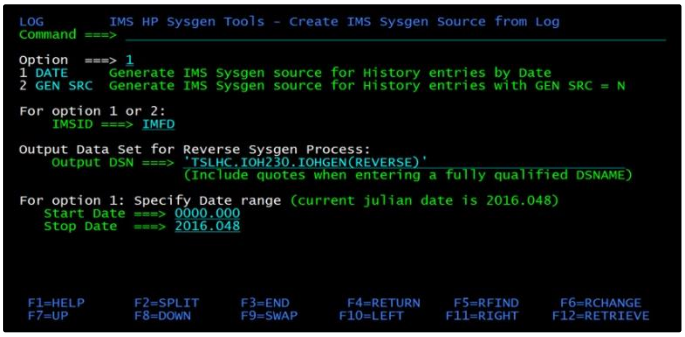

Figure 10: IMS HP Sysgen HISTORY Create IMS Sysgen Stage 1 Macros

STORAGE View and ZAP Storage

The *IMS HP Sysgen Tools* provide a view of IMS system and Common Storage Allocation (CSA) storage. The product provides the ability to view and ZAP specific information in the IMS storage as shown in Figure 11.

Figure 11: IMS HP Sysgen STORAGE Function (Option S)

IMS HP Sysgen Tools Utilities

The *IMS HP Sysgen Tools* provide three utilities, Merge/Clone Utility, Sysgen Compare Utility, and Reverse Sysgen Utility, to help ensure IMS sysgen resources are consistent across multiple IMS systems.

Merge and Clone Utility

The *IMS HP Sysgen Tools* Merge Utility allows IMS Database, Program, and Transaction macro definitions to be merged together from existing configurations when new resource definitions are added to an IMS system. This is especially important in IMS data sharing environments where IMS definitions need to be consistent across all IMS systems in the IMS Sysplex.

The *IMS HP Sysgen Tools* Clone Utility is useful in IMS data sharing environments where IMS Database, Program, and Transaction resources need to be consistent across all IMS systems in the IMS Sysplex. The Clone function allows all IMS resource definitions to be "cloned" in the creation of the new IMS system. The cloning process includes the Multiple Systems Coupling (MSC) routing definitions which are determined by an examination of Program (PSB) information and the PROCOPT requirements for the Program Communication Block (PCB) within each PSB.

Sysgen Compare Utility

The *IMS HP Sysgen Tools* Sysgen Compare Utility allows two IMS MODBLKS data sets to be compared to identify IMS Database, Program, and Transaction, resource definitions that are different or have attribute inconsistencies.

Reverse Sysgen Utility

The *IMS HP Sysgen Tools* Reverse Sysgen Utility provides the ability to reverse engineer the information in the IMS MODBLKS and RESLIB data sets to create IMS sysgen source definitions.

Communication Protocols to IMS Systems

The *IMS HP Sysgen Tools* uses APPC/MVS to request resource information from IMS. With APPC/MVS, the *IMS HP Sysgen Tools* can request information from a target IMS system on the same LPAR as the *IMS HP Sysgen Tools* product or from an IMS system on a different LPAR as shown in Figure 12.

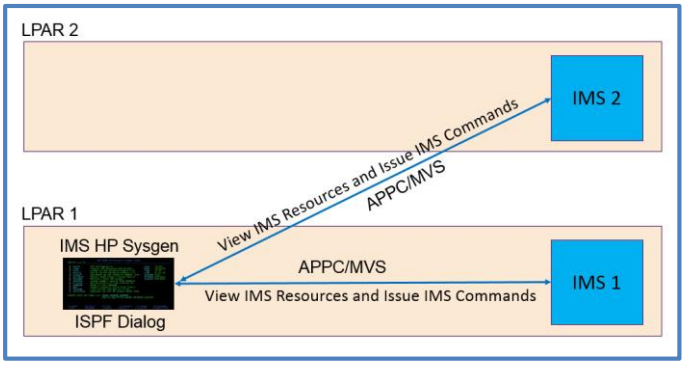

Figure 12: IMS HP Sysgen Tools APPC Communication Protocol

If APPC/IMS is enabled, the *IMS HP Sysgen Tools* can optionally issue IMS commands using APPC/IMS to the target IMS system running on the same LPAR as the executing *IMS HP Sysgen Tools* product.

IMS HP Sysgen Tools Security

The *IMS HP Sysgen Tools* is a powerful product and must be secured using local change control procedures and security profiles. The product includes several RACF (or equivalent) Facility classes as shown in Figure 13 .

RACF Facility Class	Authorization Description
IOH.SETUP	Use SETUP Menu
IOH.EDIT.imsid	Edit Resource Update List
IOH.CHECK.imsid	Check (or Verify) Resource Update List
IOH.INSTALL.imsid	Install Resource Update List
IOH.IMSCMD.imsid	Issue IMS Commands
IOH.STORAGE.imsid	View or ZAP IMS Storage

Figure 13: IMS HP Sysgen Security RACF (or equivalent) Facility Classes

For more information

To learn more about the IBM IMS Tools product line, please contact your IBM representative or IBM Business Partner, or visit: ibm.com/software/data/db2imstools/products/ims-tools.html

IBM Corporation
Route 100
Somers, NY 10589

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