

Comply with
software licenses
while reducing costs

ThruPut Manager® and Software License Savings

ThruPut Manager® is a total solution for automated batch workload management in a z/OS JES2 installation. This article introduces the facilities of the product which make it possible for datacenters to significantly reduce their software license expenses – sometimes in the amount of many hundreds of thousands of dollars and more – while keeping the changes transparent to users and making the operational environment as simple as possible.

Software Access Control in a z/OS JES2 Environment

ThruPut Manager provides the *Software Access Control (SAC)* facility to control access to z/OS licensed software, or any other software to which the installation may not want users to have general access. With software under the control of this facility, installations can conveniently reduce the number of systems where certain software is licensed and ensure license compliance.

The Challenge of Meeting Compliance Obligations

The accepted strategy for software savings is to reduce the number of systems where products are licensed. But while LPAR or system-specific licenses will bring substantial savings, they also introduce new difficulties.

Licensing obligations are paramount concern to the installation and ensuring that restricted software is only run where it is licensed is essential. The solution might seem straightforward – once the contractual and administrative issues have been addressed, just de-install the software from the non-licensed systems.

Obviously, this will ensure compliance. But an asymmetric configuration of products requires more effort as it is necessary to have a customized distribution, installation and maintenance procedure for each system.

Further, such a setup is very rigid and it is difficult to

provide an alternate system should the licensed system be unavailable.

For ease of maintenance and as a hot standby mechanism for disaster recovery, software should remain installed on all systems, including those which are not licensed. Most software licenses allow this provided the installation ensures that the software is only used on the proper

ThruPut Manager's Software Access Control facility has made it possible for datacenters to significantly reduce their software expenses – saving many hundreds of thousands of dollars and more.

system. But if policy directives and manual procedures are the only control, this is almost impossible. The possibility of being non-compliant with license terms and the exposure to liability is high.

Users and Job Routing

When products are not licensed on all systems, users need a mechanism to direct their workload to the correct system. First, users must know on which system(s) the software is available, and keeping them informed is easier said than done. TSO users need to anticipate in advance that they will invoke a licensed product, and logon to the correct system.

In the batch world, IBM has provided Resource Affinity Scheduling as a means of routing jobs. But users must specify the appropriate environment for the combination of products that the job uses. Resource Affinity Scheduling is not suitable for enforcing license compliance when software remains installed on all systems.

The ideal solution must be transparent to users and

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independent of them knowing and specifying software dependencies. It must allow software to remain physically installed on all systems for operational convenience, and must ensure license compliancy and withstand the scrutiny of an independent audit.

ThruPut Manager's *Software Access Control* fulfills all of these criteria.

Benefits of *Software Access Control*

Management and Contract Administration

Contains Costs while Compliant: With ThruPut Manager's help, datacenters can license only the number of LPARs needed. As licensed software costs account for a significant percentage of the datacenter's budget, these savings can be substantial, especially on a year over year basis.

Software User

Role Simplified: With *Software Access Control*, batch jobs which execute licensed software are automatically identified and routed to the licensed system – without the need for JCL changes or user involvement. If the datacenter updates its LPAR configuration, it is transparent to the users and their JCL.

TSO invocation of a licensed product is intercepted and disallowed if the ambient system is not licensed. The installation can specify a message to let the user know access has been denied and suggest an alternate system to use.

Software Support

Datacenter Convenience: The datacenter can move the software to a different system (temporarily or permanently), easily and without user impact.

Ease of Software Maintenance: With the *Software Access*

Licensing and Installation Scenarios in a Multiple LPAR Environment

	License all LPARs	Reduce number of LPARs licensed			
		Software installed on licensed LPARs only		Software installed on all LPARs	
		Using SYSAFF or Scheduling Environments	Using ThruPut Manager <i>SAC Table</i>	Using SYSAFF or Scheduling Environments	Using ThruPut Manager <i>SAC Table</i>
Ensures compliancy and auditability	n/a	Y	Y	N	Y
Reduces licensing costs	N	Y	Y	Y	Y
Keeps software symmetric across LPARS	Y	N	N	Y	Y
Moving workload or licenses is trivial	n/a	N (SYSAFF), easier for Scheduling Environments	Y	N (SYSAFF), easier for Scheduling Environments	Y
Jobs don't fail	Y	N	Y	N	Y
Independent of users' JCL	Y	N	Y	N	Y

Control facility of ThruPut Manager, the difficulties of maintaining customized software libraries for each system are eliminated. The task of software installation and propagation is greatly simplified.

Hot Standby for Disaster Recovery: Most licensing agreements allow installations to run the software in a backup system when the primary system is not operational. With *Software Access Control*, hot standby arrangements can be maintained without the concern of breaching software licenses.

Management and Software Vendor

Compliance Ensured: Because ThruPut Manager’s automated analysis cannot be bypassed, management and vendors alike can be confident that all jobs requiring the software will be routed to a licensed system.

Software Access Control Technical Details

Software Access Control and Batch

ThruPut Manager’s *Software Access Control* facility is based on its Job Binding Services architecture. “Binding Agents” are logical elements that the installation defines and uses to “bind” jobs to any resource it chooses. In this situation, a Binding Agent will represent a particular software product. For example, you may define a Binding Agent with the name LICENSE.COBOL to represent your COBOL software. ThruPut Manager automatically associates any job that requires COBOL with the LICENSE.COBOL Agent and selects the job for execution based on the *status* (active or inactive) and *location* (one or more specific z/OS systems) of the LICENSE.COBOL Agent. When a software license needs to be relocated, a simple operator command resets the Binding Agent location and the associated jobs start running on the new LPAR.

The identification of jobs that require access to restricted software is done automatically by ThruPut Manager’s submission-time job analysis. ThruPut Manager’s *Software Access Control* Table associates products to a particular Binding Agent.

A job may require access to multiple products, in which case ThruPut Manager determines which LPARs have all the required Binding Agents active. If all the required products are not licensed on at least one common system, ThruPut Manager fails the job with an appropriate message.

Software Access Control and TSO

The TSO services of the *Software Access Control* facility also use Binding Agents as the mechanism to control access. The *Software Access Control* Table associates programs, panels and commands with the appropriate Binding Agents.

Unlike batch jobs, TSO commands cannot be dynamically routed to different processors. So in this environment, the installation can issue a warning message or fail the invocation. A message informs the user as to which system(s) are eligible to run the product.

The TSO services of *Software Access Control* intercept all product invocations from within ISPF or from the TSO READY prompt, ensuring no unauthorized access is possible.

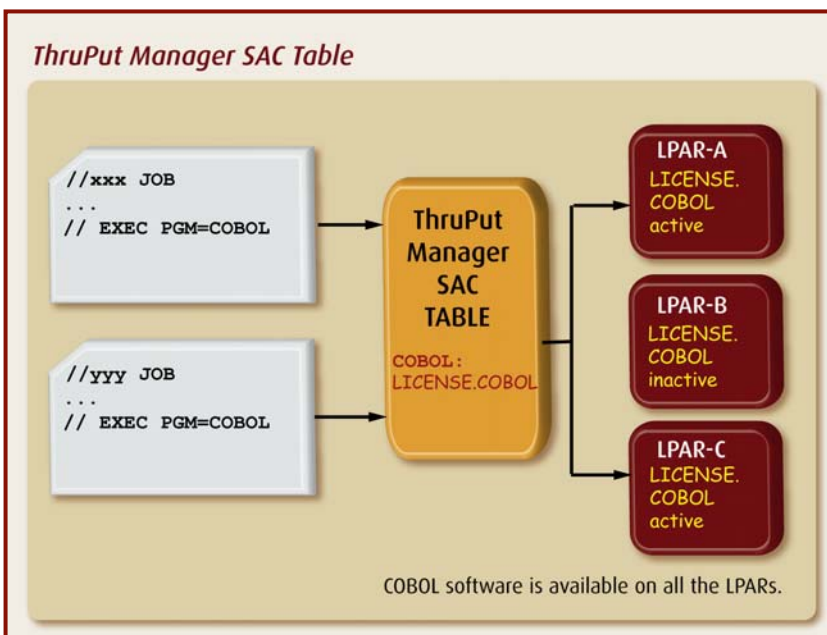


Figure 1: SAC Table Ensures Compliance

The *Software Access Control (SAC) Table* ensures jobs only run where licenses exist. This elegant solution allows the software to remain on all the LPARs. Shifting workloads to the designated backup LPAR(s) can now be accomplished with a simple operator command. Users are happy because they don’t have to change their JCL when the datacenter reorganizes, and jobs won’t fail if an LPAR goes down. Datacenters can reduce the number of licenses without impacting their service levels or adding complexity to their maintenance load.



Reduce Your Software Costs Today

In summary, the *Software Access Control* facility of ThruPut Manager provides a complete solution to routing batch jobs with software license dependencies. It is fully automated, requiring no operator or user intervention and is fully user transparent. It requires no user specification of software usage and there is no possibility of user omissions or errors.

z/OS installations can experience a significant reduction in their software budgets with a strategic plan for reducing the number of systems where a given product is licensed. The *Software Access Control* facility of ThruPut Manager makes implementation of such a plan simple and user transparent – while providing the datacenter with the automated control and flexibility needed to effectively manage their environment and ensure software license compliancy.

This document assumes the reader is familiar with ThruPut Manager. Only certain highlights of the product have been discussed here. For further information, please contact us as noted on the first page.

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