



Z Asset Optimizer Overview

Are you getting the most out of your mainframe investment?

Introducing Z Asset Optimizer

HCL Z Asset Optimize (ZAO) is a **market leading software asset discovery product** for IBM® z/OS® mainframe technology

ZAO recognizes over **15,000+ mainframe software products and features** from IBM and other software vendors and provides comprehensive software inventory reports

Tracks and reports usage of **In-house z/OS applications** – Batch workload, CICS, IMS transactions written in COBOL, PL/I, C/C++, REXX, Java

Software assets and their usage are **discovered automatically** by a batch inquisitor and a real-time usage monitor

Audit and compliance – Effectively used for discuss licensing and audit compliance with software vendors

Optimize Mainframe software cost by eliminating less frequently used software and ensuring supported software is being used

Flexible Pricing options



**Batch Inventory
Discovery**



Usage Monitoring



Reporting



Z Asset Optimizer Value Proposition

Asset & License Management



- ✓ Support complete End to End Software inventory management and reporting
- ✓ Detail analysis and reporting of Product, Vendor, Version, Release, Feature code (state all versions if multiple versions are installed), LPAR(s) they run on, Status of the product, Installation Libraries & Data set naming conventions.

Software Cost Optimization



- ✓ Analyze the Software usage of all IBM & ISV Products and Optimize Mainframe Software Licensing cost
- ✓ Key Software usage Reports to negotiate licensing cost with vendors.
- ✓ Eliminate Less frequently Software products or Not used products
- ✓ Consolidate Product with overlapping capabilities

Auditing & Compliance



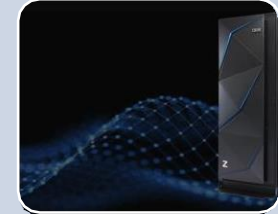
- ✓ Audit the usage of z/OS load modules and Unix executables
- ✓ Comply with License and Contracts and demonstrate compliance to software vendors
- ✓ Automate the process of up-to-date software inventory

Infrastructure Operation management



- ✓ Report Product usage by LPARS, Sysplex and CEC's
- ✓ Detail Impact on Applications, Batch Jobs & Users that helps in Planning, Validation & Testing stages
- ✓ Go-to tool for Sysprogs on Software/Hardware Upgrade or Migration projects (e.g. COBOL Upgrade)

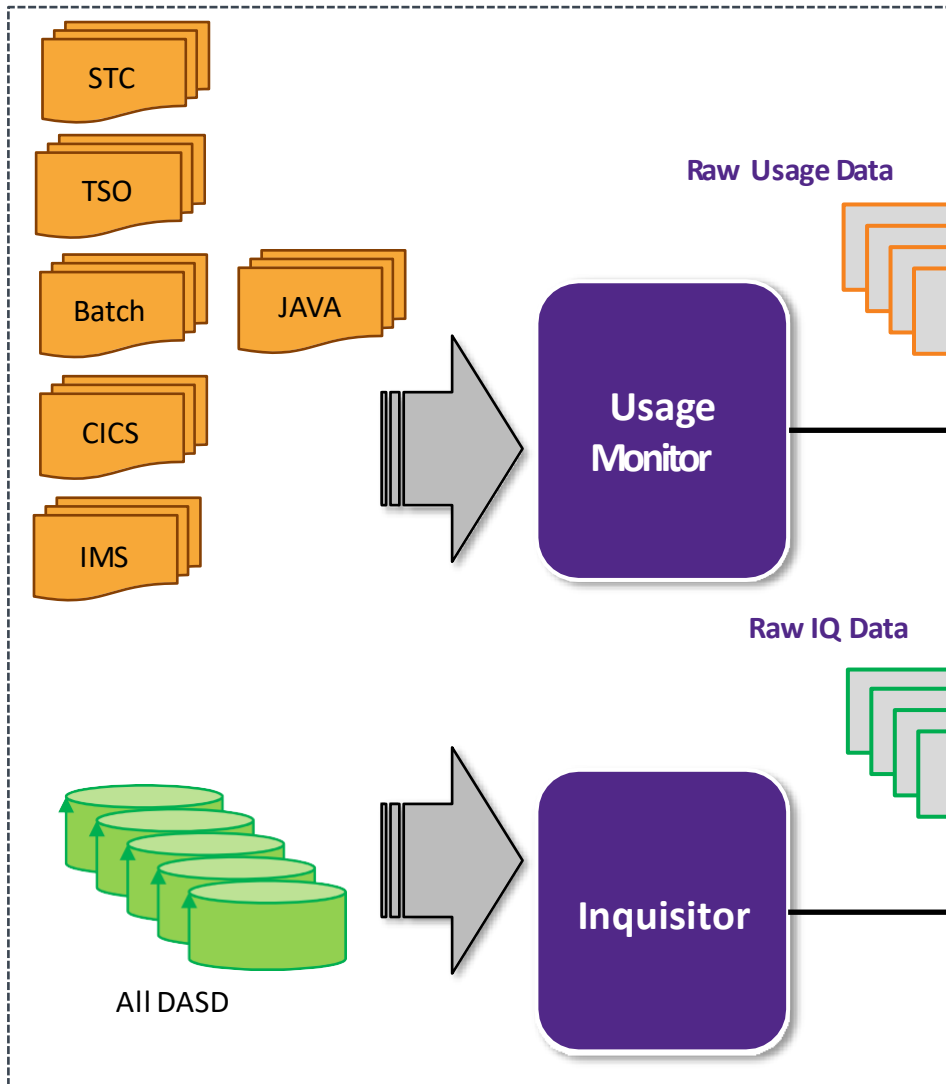
APIs' for Operational Analytics



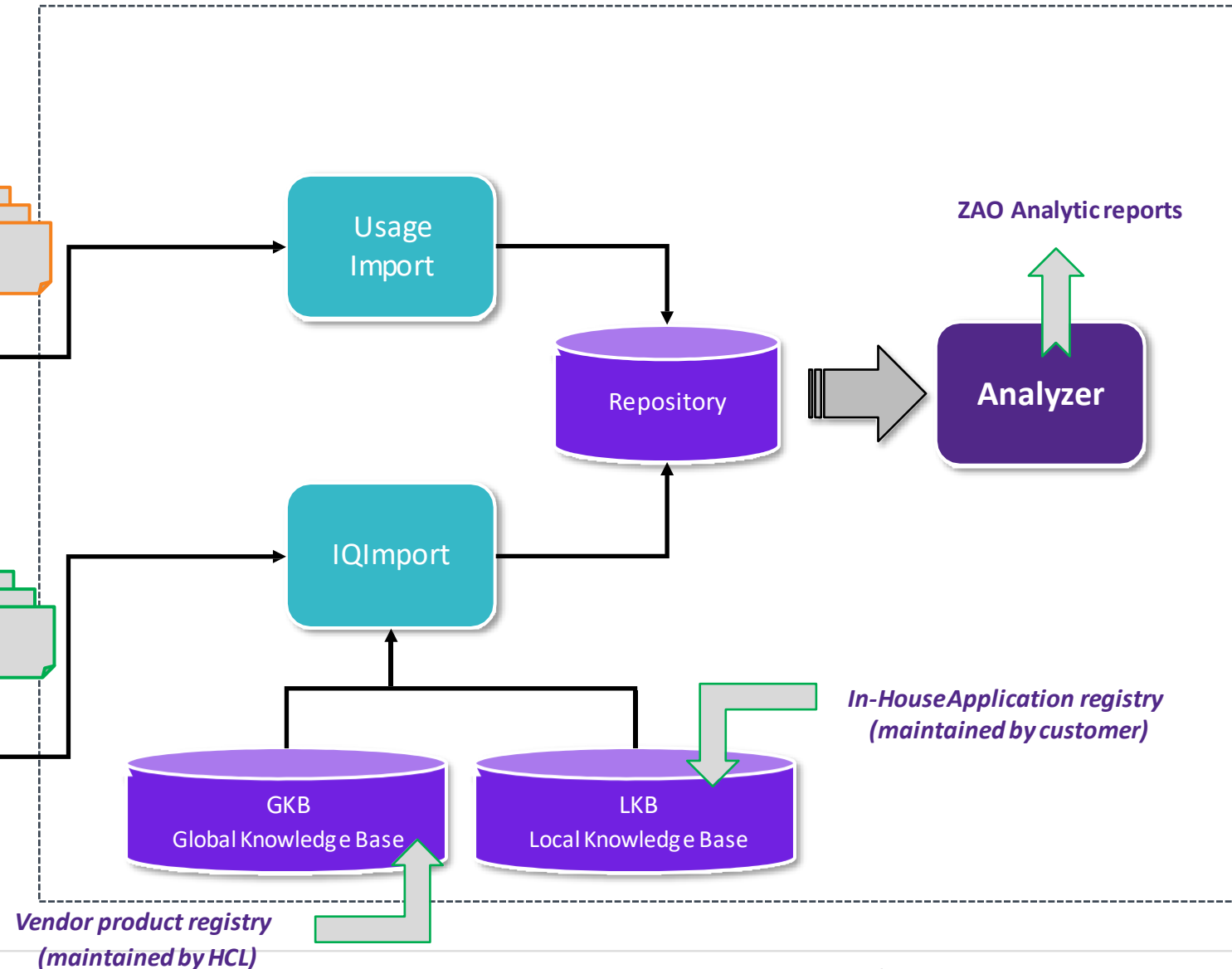
- ✓ Integrate ZAO Software asset data with local Configuration management database for better insights on Change impact
- ✓ Integrate ZAO data for Operational Analytics with SMF & Syslog data for Problem diagnosis and best practice implementation
- ✓ Automation and alerts on non compliant situations

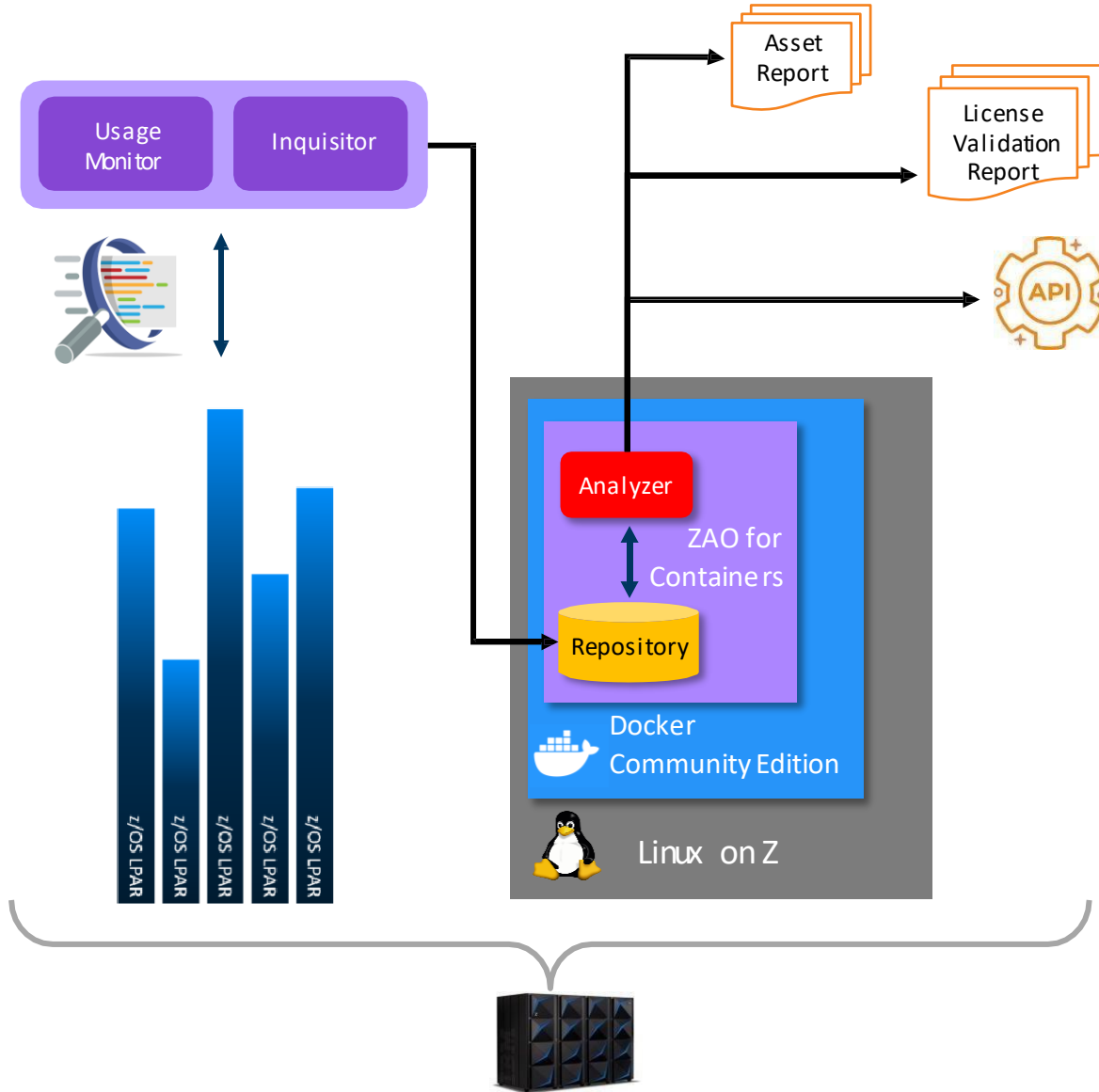
ZAO Deployment option on z/OS

Remote Mainframe Components



Central Mainframe Components





- **Simpler Maintenance:** ZAO for Containers is built ready for deployment into a target container environment
- **Reduce Cost:** ZAO for Containers runs on Linux on Z instead of z/OS – which can be an LPAR or as simple as a z/VM guest
- **Proven Reliability:** The Usage Monitor and Inquisitor are proven components of ZAO product with <1% overhead to monitor your mainframe systems
- **License Validation:** Identify areas of improvement & concerns to keep your mainframe systems optimal
- **APIs to Extract Data:** APIs are provided to extract asset management data from ZAO for Containers – consume data when you need them

ZAO Sample Reports

HCL Z Asset Optimizer		Product Inventory				Parameters New Window Home											
ZAO Demo						Download: Excel html csv txt											
Vendor	Product	Version	Title	PID	S&S PID	Feature	EID	Sysplex Name	MLC	IPLA	SUBCAP	Discovered Installed	Annotation	Systems Last Installed	Used	Systems Used	Machines Used
IBM	ACF/NCP	ACF/NCP V7		V7	5648-063	ACF/NCP V7	S000W6K	AUPLEX	Y	N		2018-04-01		2		0	0
IBM	Automatic Binary Optimizer	Automatic Binary Optimizer		V1	5697-AB1	Automatic Binary Optimizer	S017V8C	AUPLEX	N	Y	z/OS-based	2018-04-01		2		0	0
IBM	BookManager BUILD/MVS	BookManager BUILD/MVS		V2	5650-ZOS	BookManager BUILD/MVS	S01728X	AUPLEX	Y	N		2018-04-01		2		0	0
IBM	C/370 Library	IBM C/370 Library Version 2		V2	5688-188	IBM C/370 Library Version 2	S0011N1	AUPLEX	Y	N		2018-04-01		2		0	0
IBM	C/370 Library	IBM C/370 Library Version 2		V2	5688-188	IBM C/370 Library Version 2	S0011N1	USPLEX	Y	N		2018-04-01		3		0	0
IBM	CCCA for OS/390 & MVS & VM	CCCA for OS/390 & MVS & VM		V2	5648-B05	CCCA for OS/390 & MVS & VM	S000LWR	AUPLEX	Y	N		2018-04-01		2		0	0
IBM	CICS TS for z/OS	CICS TS for z/OS V5		V5	5655-Y04	CICS TS for z/OS V5	S0172DF	AUPLEX	Y	N		2018-04-01		2	2018-10	2	1
IBM	CICS TS for z/OS	CICS TS for z/OS V5		V5	5655-Y04	CICS TS for z/OS	S0172DF	USPLEX	Y	N		2018-04-01		3	2018-10	3	3
IBM	COBOL II	COBOL II		V1	5688-023	CICS Library		USPLEX	Y			2018-04-01		3		0	0
IBM	COBOL II	COBOL II		V1	5688-023	COMPILER		AUPLEX	Y			2018-04-01		2		0	0
IBM	Compiler REXX on zSeries	IBM Compiler REXX on zSeries		V1	5695-013	IBM Compiler for REXX/370	S0002RW	AUPLEX	Y	N		2018-04-01		2	2018-10	1	1
IBM	Connect Direct z/OS Std Ed	Connect Direct z/OS Std Ed		V5	5655-X09	BASE	S016XGX	AUPLEX	Y	N		2018-04-01					
IBM	Connect Direct z/OS Std Ed	Connect Direct z/OS Std Ed		V5	5655-X09	BASE	S016XGX	USPLEX	Y	N		2018-04-01					
IBM	Data Provider for z	Data Provider for z		V1	5698-ABJ	5698-ABK Data Provider for z	S0182NT	AUPLEX	N	Y	Execution-based	2018-08-01					
IBM	Data Provider for z	Data Provider for z		V1	5698-ABJ	5698-ABK Data Provider for z	S0182NT	USPLEX	N	Y	Execution-based	2018-08-01					
IBM	DATABASE 2 (DB2)	IBM DATABASE 2 (DB2) V3		V3	5685-DB2	IBM DATABASE 2 (DB2) V3	S0012K1	AUPLEX	Y	N		2018-04-01					
IBM	DB/DC Data Dict	DB/DC Data Dict. Version 1		V1	5740-XXF	DB/DC Data Dict. File Gen. V1	S0011F3	AUPLEX	Y	N		2018-04-01					
IBM	DB/DC Data Dict	DB/DC Data Dict. Version 1		V1	5740-XXF	DB/DC Data Dict. File Gen. V1	S0011F3	USPLEX	Y	N		2018-04-01					
IBM	DB/DC Data Dict	DB/DC Data Dict. Version 1		V1	5740-XXF	DB/DC Data Dict. Version 1	S0011F4	AUPLEX	Y	N		2018-04-01					
IBM	DB/DC Data Dict	DB/DC Data Dict. Version 1		V1	5740-XXF	DB/DC Data Dict. Version 1	S0011F4	USPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	USPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 12 for z/OS		V12	5650-DB2	DB2 12 for z/OS	S017GWM	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 12 for z/OS		V12	5650-DB2	DB2 12 for z/OS	S017GWM	USPLEX	Y	N		2018-04-01					
IBM	DB2 Administration Tool	DB2 Administration Tool V11		V11	5655-DAT	5655-E90 DB2 Administration Tool V11	S016GL1	AUPLEX	N	Y	Reference-based	2018-04-01					
IBM	DB2 Administration Tool	DB2 Administration Tool V11		V11	5655-DAT	5655-E90 DB2 Administration Tool V11	S016GL1	AUPLEX	N	Y	Reference-based	2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	USPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 12 for z/OS		V12	5650-DB2	DB2 12 for z/OS	S017GWM	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 12 for z/OS		V12	5650-DB2	DB2 12 for z/OS	S017GWM	USPLEX	Y	N		2018-04-01					
IBM	DB2 Administration Tool	DB2 Administration Tool V11		V11	5655-DAT	5655-E90 DB2 Administration Tool V11	S016GL1	AUPLEX	N	Y	Reference-based	2018-04-01					
IBM	DB2 Administration Tool	DB2 Administration Tool V11		V11	5655-DAT	5655-E90 DB2 Administration Tool V11	S016GL1	AUPLEX	N	Y	Reference-based	2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	USPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 12 for z/OS		V12	5650-DB2	DB2 12 for z/OS	S017GWM	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 12 for z/OS		V12	5650-DB2	DB2 12 for z/OS	S017GWM	USPLEX	Y	N		2018-04-01					
IBM	DB2 Administration Tool	DB2 Administration Tool V11		V11	5655-DAT	5655-E90 DB2 Administration Tool V11	S016GL1	AUPLEX	N	Y	Reference-based	2018-04-01					
IBM	DB2 Administration Tool	DB2 Administration Tool V11		V11	5655-DAT	5655-E90 DB2 Administration Tool V11	S016GL1	AUPLEX	N	Y	Reference-based	2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	USPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 12 for z/OS		V12	5650-DB2	DB2 12 for z/OS	S017GWM	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 12 for z/OS		V12	5650-DB2	DB2 12 for z/OS	S017GWM	USPLEX	Y	N		2018-04-01					
IBM	DB2 Administration Tool	DB2 Administration Tool V11		V11	5655-DAT	5655-E90 DB2 Administration Tool V11	S016GL1	AUPLEX	N	Y	Reference-based	2018-04-01					
IBM	DB2 Administration Tool	DB2 Administration Tool V11		V11	5655-DAT	5655-E90 DB2 Administration Tool V11	S016GL1	AUPLEX	N	Y	Reference-based	2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	USPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 12 for z/OS		V12	5650-DB2	DB2 12 for z/OS	S017GWM	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 12 for z/OS		V12	5650-DB2	DB2 12 for z/OS	S017GWM	USPLEX	Y	N		2018-04-01					
IBM	DB2 Administration Tool	DB2 Administration Tool V11		V11	5655-DAT	5655-E90 DB2 Administration Tool V11	S016GL1	AUPLEX	N	Y	Reference-based	2018-04-01					
IBM	DB2 Administration Tool	DB2 Administration Tool V11		V11	5655-DAT	5655-E90 DB2 Administration Tool V11	S016GL1	AUPLEX	N	Y	Reference-based	2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	USPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 12 for z/OS		V12	5650-DB2	DB2 12 for z/OS	S017GWM	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 12 for z/OS		V12	5650-DB2	DB2 12 for z/OS	S017GWM	USPLEX	Y	N		2018-04-01					
IBM	DB2 Administration Tool	DB2 Administration Tool V11		V11	5655-DAT	5655-E90 DB2 Administration Tool V11	S016GL1	AUPLEX	N	Y	Reference-based	2018-04-01					
IBM	DB2 Administration Tool	DB2 Administration Tool V11		V11	5655-DAT	5655-E90 DB2 Administration Tool V11	S016GL1	AUPLEX	N	Y	Reference-based	2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	USPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 12 for z/OS		V12	5650-DB2	DB2 12 for z/OS	S017GWM	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 12 for z/OS		V12	5650-DB2	DB2 12 for z/OS	S017GWM	USPLEX	Y	N		2018-04-01					
IBM	DB2 Administration Tool	DB2 Administration Tool V11		V11	5655-DAT	5655-E90 DB2 Administration Tool V11	S016GL1	AUPLEX	N	Y	Reference-based	2018-04-01					
IBM	DB2 Administration Tool	DB2 Administration Tool V11		V11	5655-DAT	5655-E90 DB2 Administration Tool V11	S016GL1	AUPLEX	N	Y	Reference-based	2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	USPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 12 for z/OS		V12	5650-DB2	DB2 12 for z/OS	S017GWM	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 12 for z/OS		V12	5650-DB2	DB2 12 for z/OS	S017GWM	USPLEX	Y	N		2018-04-01					
IBM	DB2 Administration Tool	DB2 Administration Tool V11		V11	5655-DAT	5655-E90 DB2 Administration Tool V11	S016GL1	AUPLEX	N	Y	Reference-based	2018-04-01					
IBM	DB2 Administration Tool	DB2 Administration Tool V11		V11	5655-DAT	5655-E90 DB2 Administration Tool V11	S016GL1	AUPLEX	N	Y	Reference-based	2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	USPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 12 for z/OS		V12	5650-DB2	DB2 12 for z/OS	S017GWM	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 12 for z/OS		V12	5650-DB2	DB2 12 for z/OS	S017GWM	USPLEX	Y	N		2018-04-01					
IBM	DB2 Administration Tool	DB2 Administration Tool V11		V11	5655-DAT	5655-E90 DB2 Administration Tool V11	S016GL1	AUPLEX	N	Y	Reference-based	2018-04-01					
IBM	DB2 Administration Tool	DB2 Administration Tool V11		V11	5655-DAT	5655-E90 DB2 Administration Tool V11	S016GL1	AUPLEX	N	Y	Reference-based	2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	USPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 12 for z/OS		V12	5650-DB2	DB2 12 for z/OS	S017GWM	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 12 for z/OS		V12	5650-DB2	DB2 12 for z/OS	S017GWM	USPLEX	Y	N		2018-04-01					
IBM	DB2 Administration Tool	DB2 Administration Tool V11		V11	5655-DAT	5655-E90 DB2 Administration Tool V11	S016GL1	AUPLEX	N	Y	Reference-based	2018-04-01					
IBM	DB2 Administration Tool	DB2 Administration Tool V11		V11	5655-DAT	5655-E90 DB2 Administration Tool V11	S016GL1	AUPLEX	N	Y	Reference-based	2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	USPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 12 for z/OS		V12	5650-DB2	DB2 12 for z/OS	S017GWM	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 12 for z/OS		V12	5650-DB2	DB2 12 for z/OS	S017GWM	USPLEX	Y	N		2018-04-01					
IBM	DB2 Administration Tool	DB2 Administration Tool V11		V11	5655-DAT	5655-E90 DB2 Administration Tool V11	S016GL1	AUPLEX	N	Y	Reference-based	2018-04-01					
IBM	DB2 Administration Tool	DB2 Administration Tool V11		V11	5655-DAT	5655-E90 DB2 Administration Tool V11	S016GL1	AUPLEX	N	Y	Reference-based	2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	AUPLEX	Y	N		2018-04-01					
IBM	DB2	DB2 11 for z/OS		V11	5615-DB2	DB2 11 for z/OS	S0171R2	USPLEX	Y	N		2018-04-01					
IBM	DB2	DB2															



Inventory report: Reporting a list of software products discovered on your systems

HCL Z Asset Optimizer Product Use by Month										Parameters New Window Home			
ZAO Demo										Download: Excel html csv txt			
Aqua highlight % increase from previous month										10			
Yellowhighlight % drop from previous month										10			
Red highlight % drop from previous month										30			
										Update table			
Vendor	Product	Version	PID	Feature	Sysplex	System	Month / Events						
							2018-07	2018-08	2018-09	2018-10			
IBM	CICS TS for z/OS	V5	5655-Y04	CICS TS for z/OS	AUPLEX	AU01	5801	3907	2314	977			
						AU02	203895	252727	252276	308102			
						US01	43866	43898	42507	49497			
					USPLEX	US02	15346	15585	15256	16136			
						US03	128134	130561	124820	138677			
						US04	128134	130561	124820	138677			
IBM	DB2	V12	5650-DB2	DB2 12 for z/OS	AUPLEX	AU01	23399	7821	11959	13048			
						AU02	3945231	4121647	3353446	4701322			
						US01	1863730	1336386	1203749	1491485			
					USPLEX	US02	18141	14001	18814	17078			
						US03	282039	279925	275544	308966			
						US04	282039	279925	275544	308966			

40 rows from database query - DB2.DEB3 08:53:49 2018-12-05

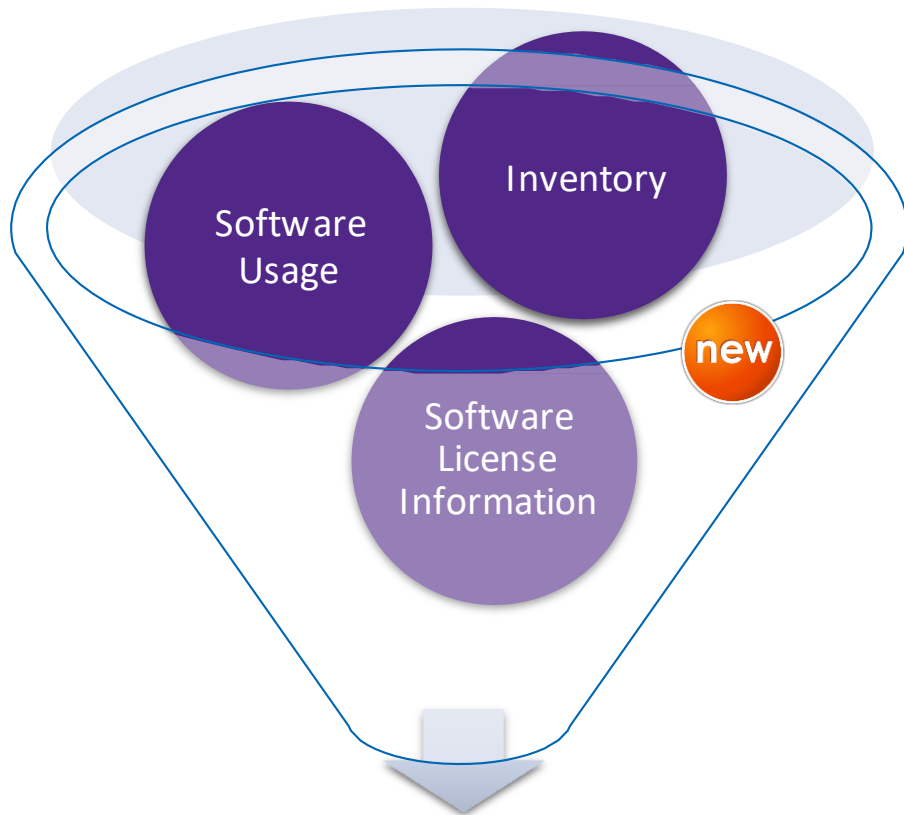
```

/asset/product_use_month
metric      = EVENT
vendor      = IBM
product     = CICS TS for z/OS
product     = DB2
repository  = ZAOPEP1
showfeature = on
showpid     = on
showaspid   = off

```



Usage report: Reporting the trending of software usage



License Verification Insights

Input required:

- The following information must be imported into ZAO interactively or in XML file:
 - **Software Details:** product ID, product name, feature, version, etc
 - **License Details:** Scope (LPAR, Machine, Enterprise), License Date, License Renew Date, Capacity, etc
 - **Vendor details:** name, contact info

License Verification Insights:

- The following reports are produced:
 1. Products with a License: no attention is required immediately
 2. **License without a product:** product licensed but not on the system → candidate for removal
 3. Products without a license: possibly installed due to bundled solution by a vendor
 4. **Entitled and Not Used:** candidates for removal to reduce cost
 5. Entitled and used: no attention is required immediately
 6. **Not Entitled and Used:** Need immediate attention to avoid audit penalty

New: License Verification Feature

Sample 1: All License Report

The screenshot shows a web application for license management. The browser address bar indicates the URL is `19.171:8081/alllicenselist`. The application has a dark sidebar with the following menu items: **All License** (selected), Reports, Products with a License, License without a Product, Products without a License, License Verified, and Welcome. The main content area features a table of licenses with the following columns: License No, Vendor, Product, Feature, Version, License date, License Scope, and Action. The table contains 11 rows of data, all from BMC Software. The 'Feature' column includes a 'BASE' button for each entry. The 'Action' column contains icons for viewing and editing each license.

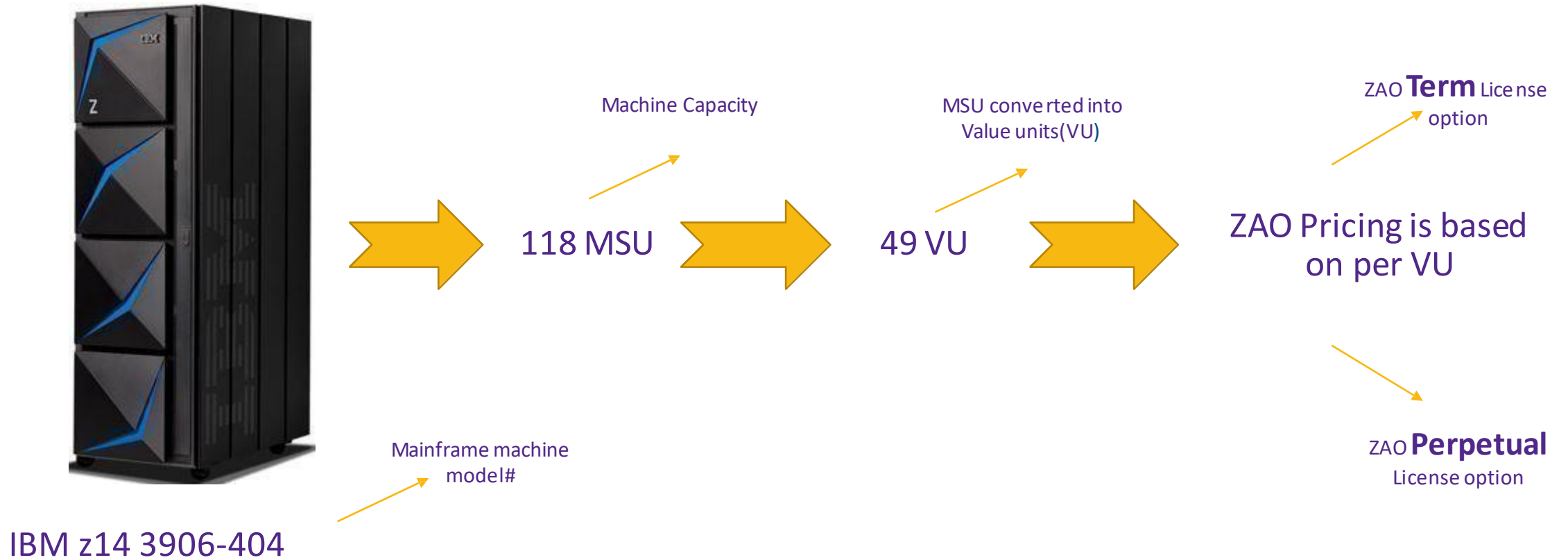
License No	Vendor	Product	Feature	Version	License date	License Scope	Action
1	BMC Software	APPTUNE for DB2	BASE	V12	2009-03-27	LPAR	
2	BMC Software	APPTUNE for DB2	BASE	V12	2009-03-29	Machine	
3	BMC Software	Backup and Recovery Solution for IMS	BASE	V1	2010-03-22	LPAR	
4	BMC Software	Backup and Recovery Solution for IMS	BASE	V4	2011-03-22	LPAR	
5	BMC Software	Backup and Recovery Solution for IMS	BASE	V5	2012-03-22	LPAR	
6	BMC Software	BMC Control-D	BASE	V7	2012-03-22	Machine	
7	BMC Software	BMC Control-D	BASE	V9	2012-03-22	Machine	
8	BMC Software	BMC Control-M for z/OS	BASE	V7	2012-03-22	Machine	
9	BMC Software	BMC Control-M for z/OS	BASE	V9	2012-03-22	Machine	
10	BMC Software	BMC Control-M/Analyzer	BASE	V7	2012-03-22	Machine	
11	BMC Software	BMC Control-M/Analyzer	BASE	V9	2012-03-22	Machine	

Sample 2: Not Entitled and Used

The screenshot shows a web browser window with the ZAO License application. The browser's address bar displays the URL `9.171:8081/reports/reportslicenseverify`. The application's left sidebar contains a menu with the following items: All License, Reports, Products with a License, License without a Product, Products without a License, License Verified (highlighted), and Welcome. The main content area is titled 'License Verified' and shows a report for 'Not Entitled and Used' licenses. The report includes a table with 16 columns: Vendor, Product, Feature, Version, PID, EID, SYSLEX, System, Capacity, License Type, Machine, License Date, Renewal Date, Last Used, and Verified. The table contains 10 rows of data, all of which are marked as 'Not Entitled and Used' (indicated by a red 'X' in the Verified column). The table is filtered by 'Vendor/Product or anything'.

Vendor	Product	Feature	Version	PID	EID	SYSLEX	System	Capacity	License Type	Machine	License Date	Renewal Date	Last Used	Verified
IBM	DB2	DB2 12 for z/OS	V12	5650-DB2		AUPLEX	AU01	133	Machine	2964-N63 A1EB7			2018-10-01	✗
IBM	DB2	DB2 12 for z/OS	V12	5650-DB2		AUPLEX	AU02	133	Machine	2964-N63 A1EB7			2018-10-01	✗
IBM	DB2 Administration Tool	DB2 Administration Tool V11	V11	5655-DAT		AUPLEX	AU01	133	Machine	2964-N63 A1EB7			2018-08-01	✗
IBM	DB2 Administration Tool V12	DB2 Administration Tool V12	V12	5655-DT2		AUPLEX	AU01	133	Machine	2964-N63 A1EB7			2018-09-01	✗
IBM	DB2 Administration Tool V12	DB2 Administration Tool V12	V12	5655-DT2		AUPLEX	AU02	133	Machine	2964-N63 A1EB7			2018-10-01	✗
IBM	Enterprise PL/I	Enterprise PL/I for z/OS	V4	5655-W67		AUPLEX	AU02	133	Machine	2964-N63 A1EB7			2018-10-01	✗
IBM	Connect:Direct z/OS Std Ed	BASE	V5	5655-X09		AUPLEX	AU02	133	LPAR	2964-N63 A1EB7			2018-10-01	✗
BMC Software	CATALOG MANAGER for DB2	BASE	V12	ISV-005619		AUPLEX	AU01	133	Enterprise	2964-N63 A1EB7			2018-10-01	✗
BMC Software	CATALOG MANAGER for DB2	BASE	V12	ISV-005619		AUPLEX	AU02	133	Enterprise	2964-N63 A1EB7			2018-10-01	✗
BMC Software	CHANGE ACCUMULATION PLUS	BASE	V5	ISV-005480		AUPLEX	AU02	133	Enterprise	2964-N63 A1EB7			2018-07-01	✗

- ZAO pricing illustration



Success story : US based Banking customer

The Challenge & need

Reduce the overall mainframe software license expense with a largest Independent software vendor

HCL Approach

Establish facts around software assets and usage to enable the customer to re-negotiate the overall software license cost within the context of overall Enterprise License Agreement.

Vendor Contract Summary

- \$71M 3-year EULA ending March 30, 2018
- 153 non-IDMS mainframe products usage up to 41,138
- 31 IDMS mainframe products up to 6,917
- 36 distributed products (various levels)
- No cost access to additional mainframe products

ZAO Asset Management Reports reveal significant cost savings in software license

Cost Reduction!!

Mainframe product utilization level is 30%:

- ❖ Only 56 of the 189 mainframe products are in use
 - ✓ 78% of non-IDMS mainframe products are not in use (only 34 out of 158 non-IDMS mainframe products in use)
 - ✓ 29% of IDMS mainframe products are not in use (only 22 out of 31 IDMS products in use)

Overlicensed mainframe software:

- ❖ 82% of non-IDMS products are using less than 40,000 MIPS – less than originally licensed!
 - Max MIPS used is 43,955 by only 1 product
 - 62% (22 out of 34) using less than 20,000 MIPS
- ❖ 81% of IDMS product MIPS are unused
 - IDMS products licensed to 6,917 MIPS, but only using 1,325 MIPS



- **Top Financial services company** – One of Largest banking institution in United States with over US \$3 trillion in client assets.

Business challenge

Monitor the usage of 40,000+ in-house developed applications in ChangeMan which was written in Assembler, COBOL, PL/I, C/C++, Java and need for an in-depth analysis of program execution in z/OS environments.

- Where the application are executing in Mainframe environment– LPARs ?
- What are the libraries names and DASD volumes (location of programs)?
- What workloads are calling these application – Batch, Transactions, users ?
- What Programming language (COBOL, C/C++, PL/1) and compiler version?
- List the dependency of application to IBM & other vendor Mainframe software's
- Data & Time of program execution

Solution benefits

- ✓ Simplified the monitor of thousands of in-house applications.
- ✓ Increased Productivity by reducing manual & complex efforts.
- ✓ Automation in discovery and usage reporting of application programs

Automated Solution :

The company exploited the Local Knowledge Base (LKB) feature to register their thousands of in-house applications through the **"Batch Tagger"** utility and wrote a simple REXX program to automatically identify the new in-house programs from the Loadlibrary.



HCL

*Relationship*TM
BEYOND THE CONTRACT

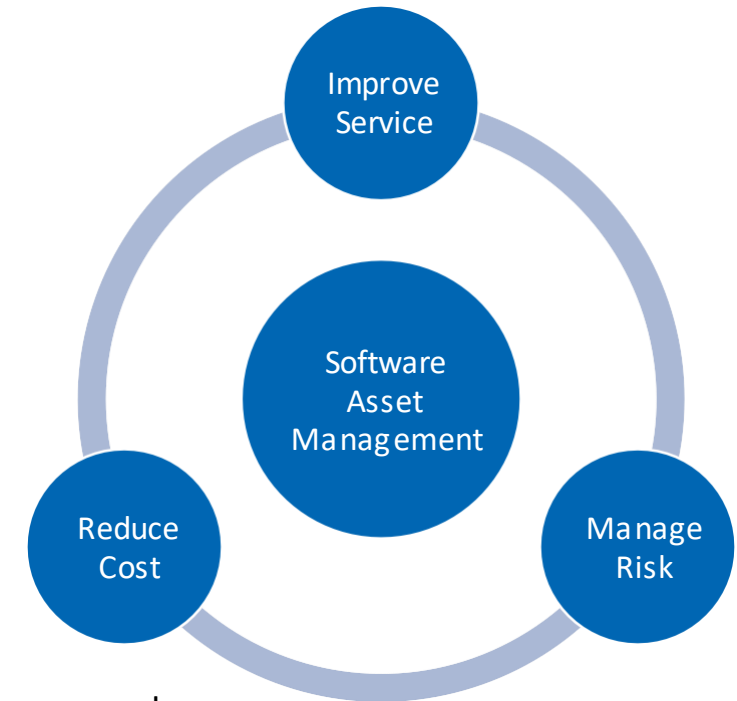
\$8.4 BILLION ENTERPRISE | 132,000 IDEAPRENEURS | 44 COUNTRIES

Contact us: ZIO@hcl.com

Are you getting the most out of Z software investment?

- How are you currently monitoring your System z software assets, usage and licenses?
- Do you know how many software products you have currently deployed?
- Do you know what they are and what they cost?
- Do you know who is using those software products?
- Do you know how often those products are being used?
- Do you have a clear understanding of the multiple versions of products installed?
- Do you have a clear understanding of products that may be installed in multiple locations?
- Do you know if you are over or undersubscribed?
- Do you know if there are any applications that are redundant, out of date or not being used?
- Can any applications be eliminated or consolidated?
- Are all of your software licenses up to date?
- Would you be in legal or financial danger if you were audited?

Enhance asset reliability and availability to deliver the most optimal service to the business



Avoid software over-purchases and financial impact of failed license compliance audits

Improve compliance with licensing requirements

Need help?

- Our SME consultants can help to install and configure the product with minimal disruption of your daily tasks
- Recommendation based on consultation to implement the product most effectively based on your requirements
- Customization to ensure ISV software products as well as in-house applications are correctly reported
- Review product reports and assist in preparing project plan to optimize your mainframe systems

