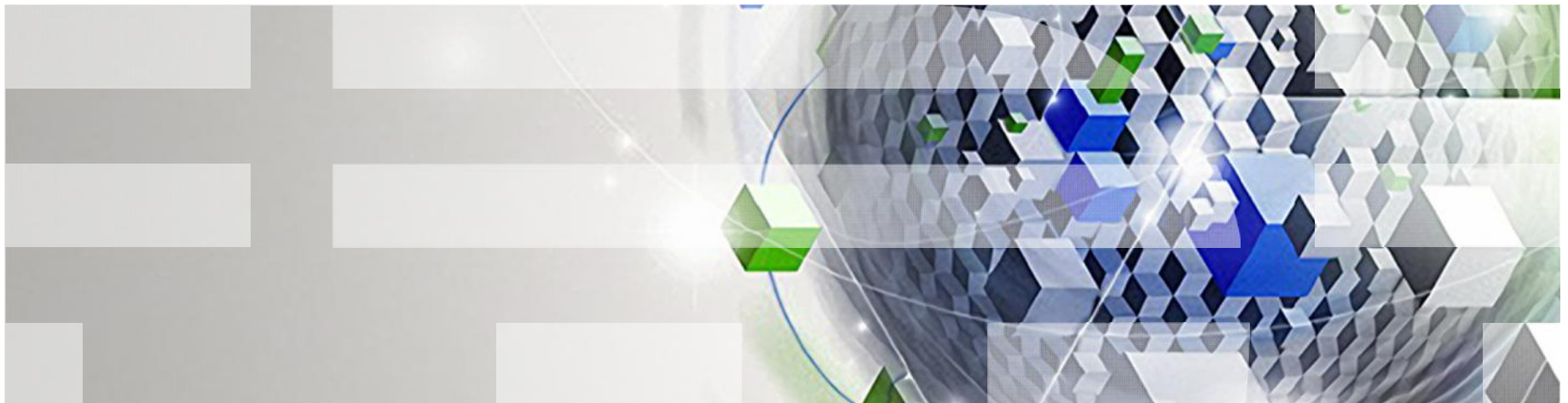

Tivoli Asset Discovery for z/OS (TADz): Quick System z ROI and Usage Tracking



Agenda

- Product Overview
 - Scenarios, Value, ROI
- Core Component Walkthrough
 - Architecture, components, workflow
- Reporting demonstration
 - The Analyzer

IBM's *Integrated Service Management (ISM)* strategy continues to focus on three key categories of operations across business and IT

VISIBILITY



*See your
business
services*

CONTROL



*Manage service
risk and
compliance*

AUTOMATION



*Optimize
business
service delivery*

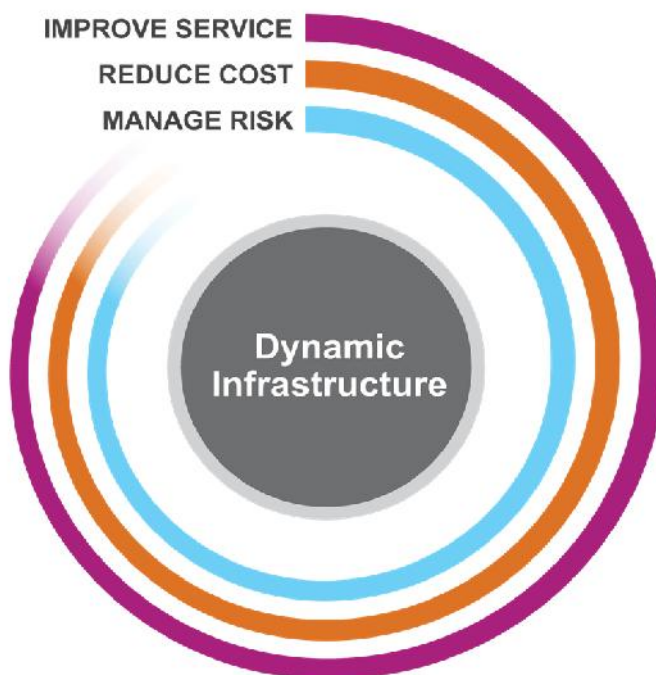
IT Asset Management is at the core of Service Management

IMPROVE SERVICE

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

REDUCE COST

Avoid software over-purchases and financial impact of failed license compliance audits, while optimizing lifetime value of IT assets



MANAGE RISK

Improve compliance with environmental, health, safety, regulatory and licensing requirements

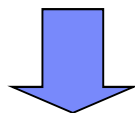
All Clients want to....

Control and assess Software Utilization

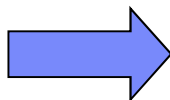
Discovery	<p>Get visibility to the environment:</p> <ul style="list-style-type: none"> • <u>Identify what SW is installed</u>
Consumption	<p>Measure utilization:</p> <ul style="list-style-type: none"> • <u>Provides utilization data of installed SW and measure consumption</u>



Get effective reports



Easily compare with Entitlements



License Audit	<p>Stay in Compliance:</p> <ul style="list-style-type: none"> • Utilization reports capable to allow easy comparison of SW utilization vs allowed entitlement
---------------	--

Services

- For IBM Mainframe Systems
- z/OS and Unix System Services (USS)
- Software Asset Discovery with related Hardware details
- Software Use Metering
- Software Use Reporting
- Software identification catalogue, which contains over 14,000 signatures out of the box and updates are released regularly
- Easily customize the software identification catalogue to include tracking of home-grown and proprietary applications

14,000+
Software products
in the Knowledgebase



Benefits

- **Assess** software inventory
 - Vendors, Product Titles, Features, Modules
 - Versions, Releases, Maintenance levels
 - PID, S&S PID, Entitlement ID
 - Covers IBM MLC and OTC software
- **Reports** where software is installed
 - Regions, Machines, LPARs, SMF ID, Storage Volumes, Datasets
- **Meters** software usage
 - Monthly periods with trend graphs with details showing who is using the product: Job names, Users, Account Codes

TADz ROI – Get the most from your budget

Software license cost optimization

- TADz provides the monitoring and reporting that enables you to:
 - Drop products that are no longer being used
 - Consolidate product versions
 - Consolidate similar products e.g. inherited from company mergers
 - Consolidate product machine/system coverage



Hardware upgrade optimization

- In order to safely move workload to different LPARs, you need to know who is using what, where and when

Less administration to prove license compliance

Negotiate with vendors with the power of knowing usage trends

- Understanding product usage trends is extremely important for contract renewal negotiations
 - Which products should be included in an Enterprise License Agreement (ELA)
 - Product LPAR capacity restricted licenses
 - Assess what would be impacted by a competitive product replacement

TADz ROI - Protect against losing money... Financial Accountability

Reduce the risk of unexpected outages

- See who would be impacted by an upgrade
- See which products a job is using
- See where different maintenance levels are deployed
- See what needs to be replicated to Disaster Recovery systems



Avoid license compliance violation penalties

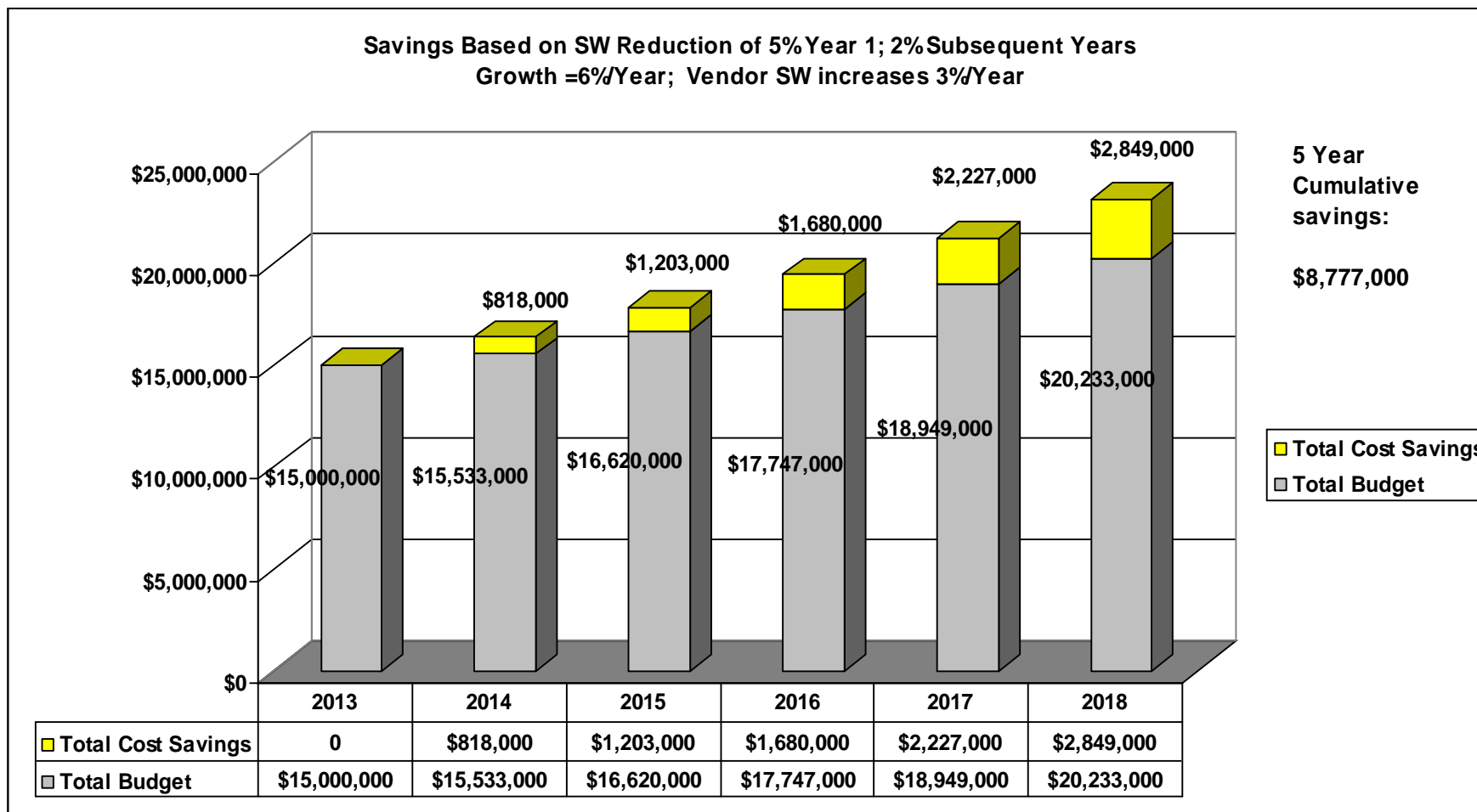
- If an audit finds unlicensed products being used, the customer usually needs to pay for 3 years retrospective license fees unless they can prove the usage was not sustained
- TADz can provide an audit trail - be able to substantiate product usage history easily and accurately
- Be able to detect trivial violations ASAP and stop them from becoming major
- IBM SmartCloud Control Desk (SCCD) can also leverage the TADz data to provide more effective license management

Assist planning for mergers, acquisitions and strategic outsourcing

- Every major outsourcer uses TADz, as their business relies on being accountable to their customers
- Reduce the risk of taking over support for an inherited z/OS environment
- TADz can show you who is using what, where and when and if products are not used at all
- Plan consolidations with accurate discovery and usage data

TADz provides valuable data that helps substantiate charge-back or 'show-back'

Conservative ROI



Product Discovery and Usage Details

Which products are installed

- Vendors, Product Titles, Features, Modules
- Versions, Releases, Maintenance levels
- PID, S&S PID, Entitlement ID

Where the products are installed & used

- Regions, Machines, LPARs, SMF ID, Storage Volumes, Datasets

Who is using the products

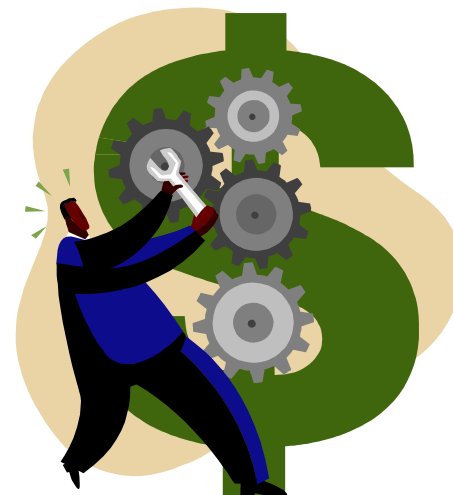
- Job names, Users, Account Codes

When the products are being used

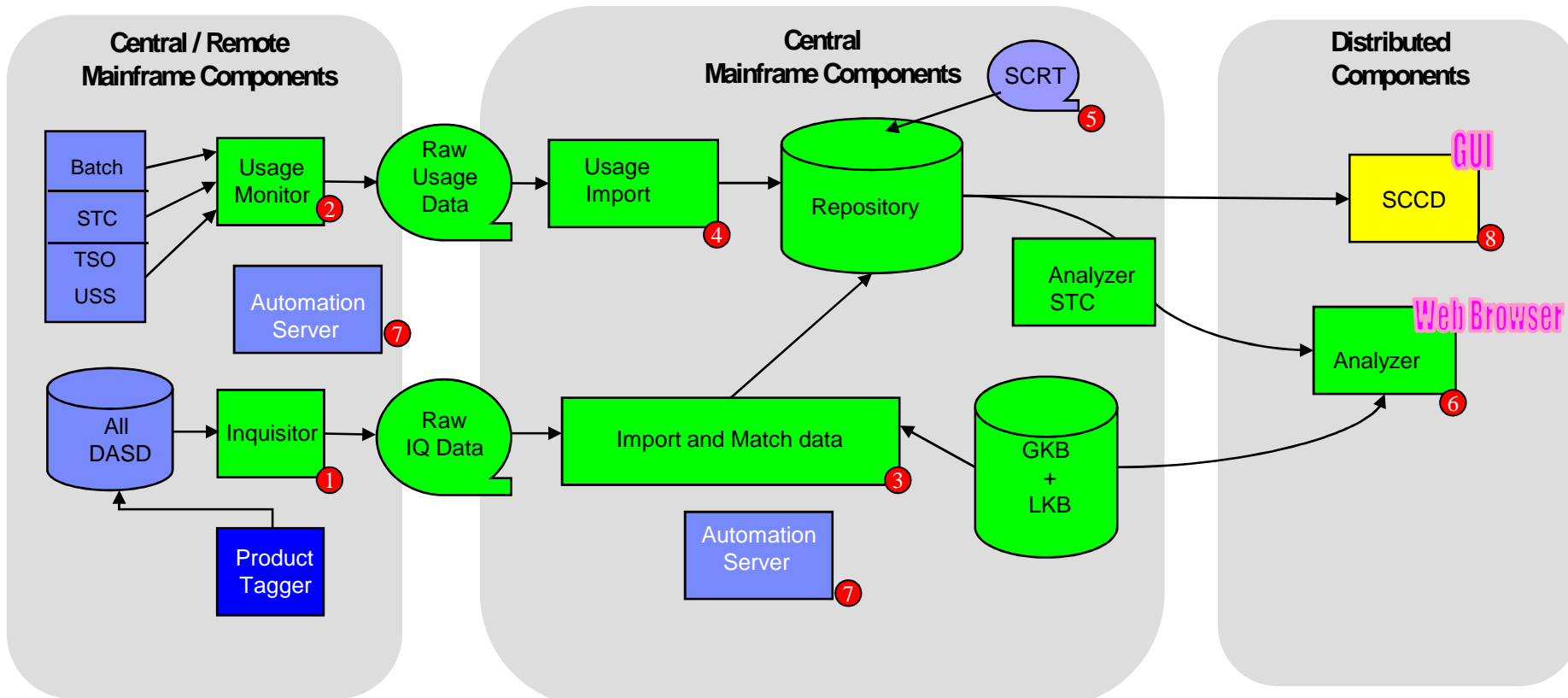
- Monthly periods

What products can potentially be consolidated

- Trend graphs with drill down to show who is using the product



TADz Architecture and Workflow



1. Inquisitor DASD scan of PDS, PDSE program libraries, HFS and zFS files. z/OS Storage devices may be included.
2. Monitor load module and USS executable usage.
3. Import and match Inquisitor raw data and load into Repository on Central z/OS. Match using GKB/LKB.
4. Import usage monitor data and load into Repository on Central z/OS.

5. Import SCRT data (Optional).
6. Web browser to view Analyzer reports
7. Automation Server (Optional).
8. SmartCloud Control Desk can be provided with information from the TADz repository (Optional).

Inquisitor Overview

- Collects information about executable software – modules and libraries
- Exports this to a compressed dataset
- This dataset is a ‘snapshot in time’ of the software on the system and used as the input to the IQ Import process
- Runs infrequently (monthly or quarterly)
 - Can run on a single LPAR in a Shared DASD pool (or on each LPAR)
- Always best to let it scan everything initially (no filters)
- Different processes are used to scan a z/OS DASD subsystem and a UNIX System Services (USS) system

TADz IQ Import process

One JOB that does 3 bits of processing:

- Import raw IQ data
- **Matching**
 - The Match Engine (ME) step identifies groups of load modules (executables for USS) in the IQ tables as belonging to certain program products
 - Processes the data within DB2
 - **Warm Matching** – only libraries that have had changes since last run
 - Uses both the Global and Local Knowledgebases
- **Loads matched data to the Repository**

TADz Usage Monitor

- Runs as a Started Task or a batch job on all LPARs
- Tracks when load modules are loaded into memory by job name, userid and job account code
- Captured data is automatically aggregated
- Captured data is stored in a dataspace Repository
- Data is written from the dataspace to a compressed file at Midnight by default or when the dataspace is full
- Has to run APF Authorized
- TADzIN DD contains initial commands which are executed before data collection becomes active

Support for SQLite database

- Supports SQLite database as an alternative to the DB2 database
- This new database support provides a low-administration alternative for small customers who do not have DB2 or do not have the resources to maintain a DB2 database

Discovery of Storage Subsystems and deeper Hardware discovery

- Storage Subsystems report is a new report that shows storage subsystems and the channels that are attached to them
- Information on memory, CPUs, IFL's, zIIPs, zAAPS etc..

Custom product names, Annotations, ISV EOS dates

- For customers who support older product names, this feature enables users to enter an alternate name for a product that displays in reports in Tivoli Asset Discovery for z/OS

CICS Transaction Server monitoring

MSU and Value Unit reporting

- Full or subcap MSU reporting with conversion to VU's

Analyzer Reports

The reports are sorted into 4 groups

Asset Reports

- The Assets menu tab contains reports that query high level aggregated data e.g. Product Versions. This level of data is generally of interest to people who are reconciling product licenses.

Discovery Reports

- The Discovery menu tab contains reports that query low level discovery data e.g. Product Releases, libraries and modules. This level of data is generally of interest to people who support z/OS systems.

Administration Reports

- The Administration Tab contains administration tasks and trouble shooting reports. These are designed for the Tivoli Asset Discovery for z/OS administrators. End users will normally not see this menu since they will not have been granted access

Custom Reports

- This is where you can create or store your own custom queries

All reports run online via the Analyzer UI can be run in Batch as well

Determining the state of mainframe Software Asset Management in your organization



The following questions offer a good place to start:

- How are we currently monitoring our System z software assets, usage and licenses?
- How many applications and tools do we have currently deployed?
- What are they and what do they cost?
- Who is using that software and for what?
- How often are those applications being used?
- Are we over or undersubscribed?
- Is that use accurately reflected in chargeback processes?
- Are any applications redundant, out of date or not being used?
- Can any applications be eliminated or consolidated?
- Are all our software licenses up to date?
- Would we be in legal or financial danger if we were audited?





Thank you

For more information contact your C&SI z/OS seller

or:

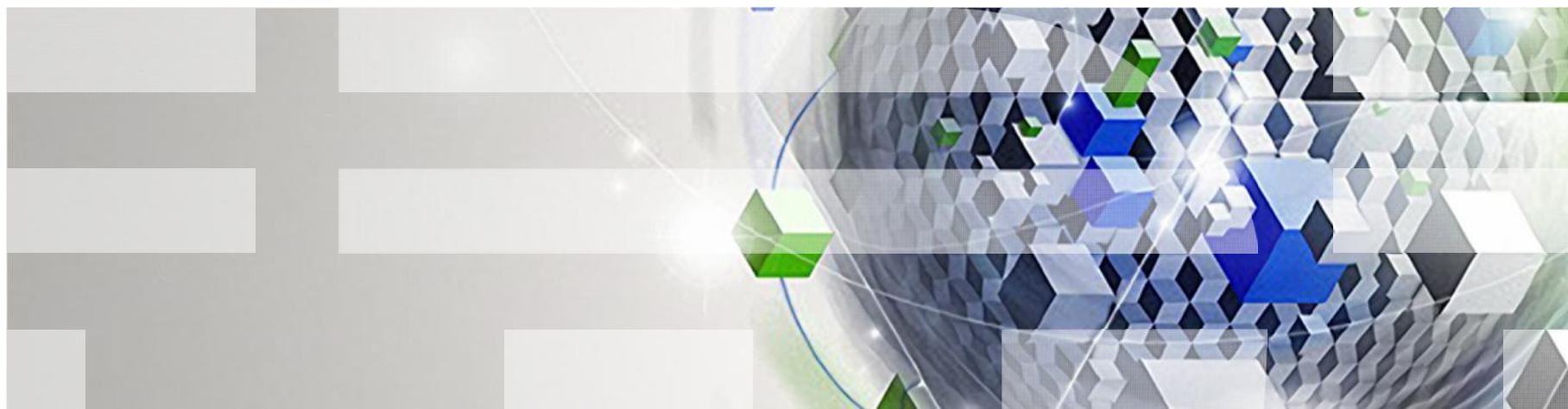
<http://www-03.ibm.com/software/products/en/tivoasssedisc/>

or

Contact Barry Siegel – bsiegel@us.ibm.com

212-671-9584

Backup slides – TADz Reporting



PC Browser direct to z/OS based TADz Analyzer

Tivoli Asset Discovery for z/OS Analyzer Menu New Window Logoff TADZADM

Assets Discovery Administration Custom

Analyze high level aggregated data e.g. Product Versions

Machine Inventory	System z Machine inventory summary
Machine Resources	Machine Resources
Product Inventory	Product version inventory summary
Product Audit Trail	Product version audit trail
Product by System	Cross reference of product versions per System
Product by Sysplex	Cross reference of product versions per Sysplex
Product by System Group	Cross reference of product versions per System Group
Product by Repository	Cross reference of product versions per Repository
Vendor Use by Month	Cross reference of vendor products used per Month by System
Product Use by Month	Cross reference of product versions used per Month by System
Product Use Trend	Product version usage trend chart
Product Use by Machine	Cross reference of product versions used per Machine
Product Use by Machine MSU	Cross reference of product versions by Machine MSU capacity
Product Use by Machine and IBM Value Units	Cross reference of product versions by Machine and Value Units
Registered Products	Products Registered in Parmlib
Registered Product Usage	Usage of Registered Products
Search User Ids	Search product version usage details for user ids
Search Job Names	Search product version usage details for job names
Search Job Account Codes	Search product version usage details for job account codes
Storage Subsystem Hardware	Storage Subsystem Hardware

- Asset reports are good for people who reconcile z/OS product licenses
- See what product versions are being used, when, where and by who.

Analyzer Menu - Mozilla Firefox: IBM Edition

File Edit View History Bookmarks Tools Help

Analyzer Menu

9.42.46.74:9083

Tivoli Asset Discovery for z/OS **Analyzer Menu** New Window Logoff TADZADM

Assets **Discovery** Administration Custom

Analyze low level discovery data e.g. Product Releases, Libraries, Modules

GKB Summary	Summary of products in the Global Knowledge Base catalog
GKB Discovery Summary	Summary of products in the Global Knowledge Base catalog showing which products have been discovered
Discovered Product Summary	Summary of discovered products
Discovered Product Detail	Detail of discovered products
Discovered Product Audit Trail	Audit trail of discovered products
Discovered Product by System	Cross reference of discovered products per System
Discovered Product by Sysplex	Cross reference of discovered products per Sysplex
Discovered Product by System Group	Cross reference of discovered products per System Group
Discovered Product by Repository	Cross reference of discovered products per Repository
Discovered Product Use by Month	Cross reference of discovered products used per Month by System
End of Service Products	Summary of discovered products that have a known End of Service date
Product Change Reports	What has changed reports
Product Libraries	Summary of discovered product libraries
Product Library Usage	Summary of discovered product library usage
Volumes by System	Summary of discovered library volumes by system
Dataset HLQs by System	Summary of discovered dataset high level qualifiers by system
Libraries by System	Summary of discovered libraries by system
Search Libraries	Search Libraries, with optional filters for library name mask and containing module name mask
Search Modules	Search Modules, with optional filters for module name mask and library name mask
Job Use by Product Library	Product release usage summary per Job name and Product Library
Usage Monitor File Detail	Inspect usage detail in Usage Monitor raw data zip files or ZCAT zip files

- Discovery reports are good for people who support z/OS systems
- See what product releases, libraries and modules are being used, when, where and by who.

Analyzer Menu - Mozilla Firefox: IBM Edition

File Edit View History Bookmarks Tools Help

Analyzer Menu

9.42.46.74:9083

Tivoli Asset Discovery for z/OS **Analyzer Menu** New Window Logoff TADZADM

Assets Discovery **Administration** Custom

Administration tasks and trouble shooting

Define Annotations	Define Annotations for Inventory Product reports
Define Alternate Product Names	Define alternate product names to display in reports instead of the vendor defined product names
Define ISV EOS Dates	Define End of Service dates for ISV Products reports
Define Repository Name	Define the Repository name, which is shown in the report header and Repository selection parameter
Define System Groups	Define System Groups, which are used in the Product by System Group report
Delete Obsolete Hardware	Delete Obsolete Hardware
Libraries with Unknown Modules	Libraries with modules that have not been identified to a product release
LKB Summary	Summary of products in the Local Knowledge Base catalog
IQ Import Logs	Logs showing IQ Import history
Usage Import Logs	Logs showing Usage Import history
Database Statistics	Database statistics, including space used.
SQL Select Query	Ad hoc SQL Select query
Support	Tivoli Asset Discovery for z/OS Support Portal
Download GKB	Download the latest Global Knowledge Base from IBM Fix Central

DB2 Subsystem is DB2 DBA2
Analyzer Build Level is 20130117 OA39833

Report Parameters

Product Libraries - Parameters - Mozilla Firefox

http://pthomu1.au.ibm.com:9000/disc_product_libraries_parms.htm?repschma=SIDEMO

Product Libraries - Parameters

Tivoli Asset Discovery for z/OS
DEMO Corporation - Perth

Product Libraries - Parameters

Library name search criteria:

Volume search criteria:

Vendor:

- All Vendors
- Allen Systems Group
- Applied Expert Systems Inc.
- Australian Systems Engineering
- BMC Software
- CA, Inc.
- Chicago Soft
- Compuware Corporation

Product Release:

- All Product Releases
- Allen Systems Group - ASG-Alliance
- Allen Systems Group - ASG-AutoChange
- Allen Systems Group - ASG-Bridge
- Allen Systems Group - ASG-Encore
- Allen Systems Group - ASG-Estimate
- Allen Systems Group - ASG-ESW
- Allen Systems Group - ASG-Insight

Show Product Release Options:

Exclude Unknown Releases:

Result row limit:

Output format:

- Optional filter parameters
- Click Submit to run the report

High Level Summary Reports with easy hyperlinks to details

Product Inventory - Mozilla Firefox

http://pthomu1:9009/asset/product_inventory?repschma=SIDEMO&system=&vendor=&product=&outfmt=

Product Inventory

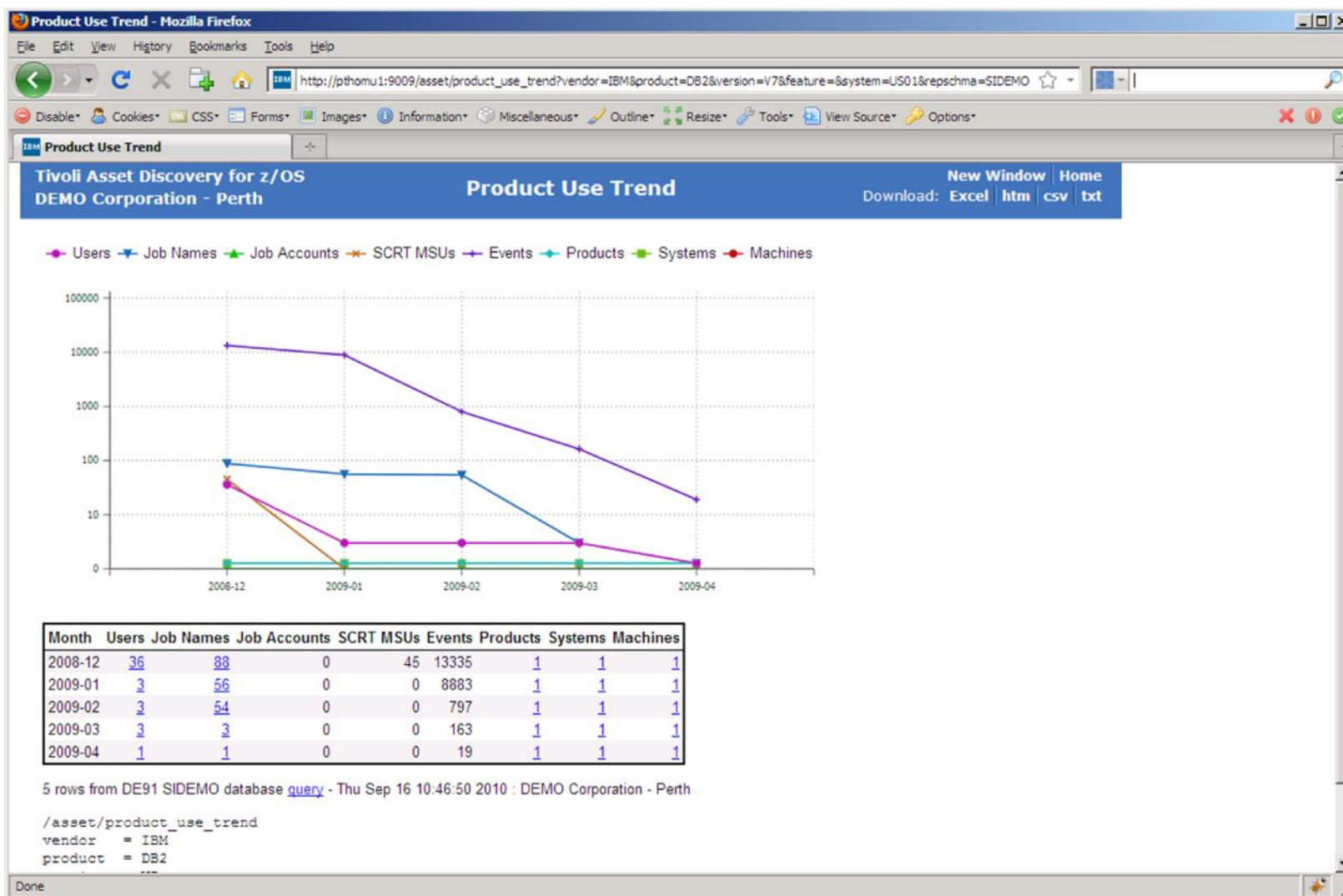
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DEMO Corporation - Perth

Download: Excel htm csv txt

Vendor	Product	Version	PID	S&S	PID	First Observed	Last Used	Systems	Machines
Allen Systems Group	ASG-Alliance	V7				2009-04		0	0
Allen Systems Group	ASG-AutoChange	V7				2009-04		0	0
Allen Systems Group	ASG-Bridge	V7				2009-04		0	0
Allen Systems Group	ASG-Encore	V7				2009-04		0	0
Allen Systems Group	ASG-Estimate	V7				2009-04		0	0
Allen Systems Group	ASG-Insight	V7				2009-04	2009-05	1	1
Allen Systems Group	ASG-JOB/SCAN	V7				2009-04	2009-05	1	1
Allen Systems Group	ASG-Recap	V7				2009-04		0	0
Allen Systems Group	ASG-SmartDoc	V7				2009-04		0	0
Allen Systems Group	ASG-SmartEdit	V7				2009-04	2009-03	1	1
Allen Systems Group	ASG-SmartTest	V7				2009-04	2009-05	2	1
Applied Expert Systems Inc.	CleverTCP/IP	V7				2009-04	2009-05	2	2
Australian Systems Engineering	ISPZIP	V1				2009-04	2009-05	3	2
BMC Software	APPTUNE for DB2	V5				2009-04	2009-04	3	2
BMC Software	APPTUNE for DB2	V6				2009-04	2009-05	3	2
BMC Software	BMCDN for DB2	V2				2009-04	2009-05	2	2
BMC Software	CATALOG MANAGER for DB2	V8				2009-04	2009-05	3	2
BMC Software	CATALOG MANAGER for DB2	V9				2009-04	2009-05	3	2
BMC Software	CHANGE MANAGER for DB2	V8				2009-04	2009-05	3	2
BMC Software	CHECK PLUS for DB2	V8				2009-04	2008-12	3	2
BMC Software	CHECK PLUS for DB2	V9				2009-04		3	2
BMC Software	CMF MONITOR	V5				2009-04	2009-04	3	2
BMC Software	COPY PLUS for DB2	V7				2009-04	2009-05	3	2
BMC Software	COPY PLUS for DB2	V8				2009-04	2009-05	3	2
BMC Software	CROSS-SYSTEM IMAGE MANAGER	V1				2009-04		3	2
BMC Software	DASD Manager Plus for DB2	V8				2009-04	2009-05	3	2
BMC Software	DATA ACCELERATOR Compression	V1				2009-04		0	0
BMC Software	DATA PACKER for DB2	V3				2009-04		0	0
BMC Software	Database Administration for DB2	V4				2009-04	2009-05	3	2
BMC Software	EXTENDED BUFFER MANAGER for DB2	V5				2009-04	2009-05	3	2
BMC Software	High-speed Apply Engine	V4				2009-04	2009-05	3	2

Hyperlinks to drill down for more details

Trend Charts



Crosstab reports

Product Use by System - Mozilla Firefox

http://pthomu1.au.ibm.com:9000/product_use_system?repschma=SIDEMO&system=&vendor=&product=&oi

Product Use by System

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Product Use by System

New Window Home
Download: Excel htm csv txt

Crosstab Grid

Vendor	Product	Version	System				
			AU01	AU02	US01	US02	US03
Allen Systems Group	ASG-Insight	V7			2009-05		
	ASG-JOB/SCAN	V7			2009-05		
	ASG-SmartEdit	V7			2009-03		
	ASG-SmartTest	V7			2009-05	2009-05	
Applied Expert Systems Inc.	CleverTCP/IP	V7	2009-05			2009-05	
Australian Systems Engineering	ISPZIP	V1	2009-05		2009-05	2009-04	
BMC Software	APPTUNE for DB2	V5	2009-04		2009-04	2009-04	
		V6	2009-05		2009-05	2009-05	
	BMCDNS for DB2	V2	2009-05		2009-04	2008-12	
	CATALOG MANAGER for DB2	V8	2009-05		2009-05	2009-05	
		V9	2009-05		2009-05	2009-05	
	CHANGE MANAGER for DB2	V8	2009-05		2009-05	2009-04	
	CHECK PLUS for DB2	V8			2008-12		
	CMF MONITOR	V5	2009-04				
	COPY PLUS for DB2	V7	2009-05		2009-04	2009-05	
		V8	2009-05		2009-05	2009-05	
	DASD Manager Plus for DB2	V8	2009-05		2009-05	2009-05	
	Database Administration for DB2	V4	2009-05		2009-05	2009-05	
	EXTENDED BUFFER MANAGER for DB2	V5	2009-05		2009-05	2009-05	
	High-speed Apply Engine	V4	2009-05		2009-04	2009-05	
		V8	2009-05		2009-05	2009-05	
LOADPLUS for DB2	V8	2009-05		2009-04	2009-05		

Done

- Crosstabs are great for highlighting differences at a high level
- Hyperlinks to drill down for more details

Color coded trend reports

Product Use By Month - Mozilla Firefox

http://pthomu1:9009/asset/product_use_month?repschma=SIDEMO&metric=EVENT&months=&system=&vendor=IBM&product=&=&sol

Product Use By Month

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Product Use By Month

New Window Home
Download: Excel htm csv txt

Aqua highlight % increase from previous month

Yellow highlight % drop from previous month

Red highlight % drop from previous month

Product	Sysplex	System	Month / Events				
			2008-12	2009-01	2009-02	2009-03	2009-04
IBM - ACF/SSP V4	USPLEX	US01			7		
IBM - Candle Command Centre V1	AUPLEX	AU01	2	3			1
	USPLEX	US01		13	2	4	
	US02			2			
IBM - CICS TS V3	AUPLEX	AU01	207101	210190	200964	224408	219819
	AU02		43502	43071	39034	45805	43100
	USPLEX	US01	783345	765877	738373	849694	807618
IBM - CICS VSAM Recovery V4	US02		232226	225185	207565	234042	242689
	AUPLEX	AU01	7595	7590	6855	7595	7320
IBM - DB2 Utilities Suite V8	USPLEX	US02	3720	3720	3360	3715	3580
	AUPLEX	AU01	63364	61306	57750	66808	61348
	USPLEX	US01	248388	223888	228020	271824	232064
IBM - DB2 V7	US02		87248	87192	70406	95004	86100
	AUPLEX	AU01	2856				
	USPLEX	US01	13335	8883	797	163	19
IBM - DB2 V8	US02		2368				
	AUPLEX	AU01	762041	719032	800085	946443	1225978
	USPLEX	US01	1115449	1853842	1391005	1705842	2592883
IBM - DCF Document Composition Fac V1	US02		420571	343631	477026	550835	732138
	AUPLEX	AU01	1071	1047	1032	1122	1032

Done

At a glance see which hyperlink is worth clicking to see a trend chart and details

Exporting the reports to a spreadsheet

The screenshot shows a Mozilla Firefox browser window displaying a report titled 'Product Use by System' from Tivoli Asset Discovery for z/OS. The report is a table with columns for Vendor, Product, Version, and System. The System column is further divided into sub-columns: Δ1101, Δ1102, IIS01, IIS02, and US03. A dialog box titled 'Opening product_use_system.xls' is overlaid on the report, showing options to 'Open with' Microsoft Excel (default) or 'Save File'. A green callout bubble points to the 'Download' link in the top right corner of the report page.

Vendor	Product	Version	System						
			Δ1101	Δ1102	IIS01	IIS02	US03		
Allen Systems Group	ASG-Insight								
	ASG-JOB/SCAN								
	ASG-SmartEdit								
	ASG-SmartTest								
Applied Expert Systems Inc.	CleverTCP/IP								
Australian Systems Engineering	ISPZIP								
BMC Software	APPTUNE for DB2								
	BMCDSN for DB2								
	CATALOG MANAGE								
	CHANGE MANAGE								
	CHECK PLUS for DI								
	CMF MONITOR	V5	2009-04						
	COPY PLUS for DB2	V7	2009-05		2009-04	2009-05			
		V8	2009-05		2009-05	2009-05			
	DASD Manager Plus for DB2	V8	2009-05		2009-05	2009-05			
	Database Administration for DB2	V4	2009-05		2009-05	2009-05			
	EXTENDED BUFFER MANAGER for DB2	V5	2009-05		2009-05	2009-05			
	High-speed Apply Engine	V4	2009-05		2009-04	2009-05			
		V8	2009-05		2009-05	2009-05			
	LOADPLUS for DB2	V8	2009-05		2009-04	2009-05			

• All reports can be exported to Excel, HTM file, CSV file or TXT file