VitalSigns for z Tuning

At Software Diversified Services, we specialize in mainframe performance tuning and cost reduction. VitalSigns for z Tuning is available as a service or as a licensed product for purchase.

VitalSigns for z Tuning contains 22 software tools that examine tens of millions of data settings that are located in programs, JCL, libraries, files, and disk storage. These settings affect the speed and cost of running the mainframe.

We compare every setting to an expert database and identify those settings that can be improved. The optimized settings will speed up the computer and reduce the cost of operation. Detailed instructions accompany the software to install and test the new settings. No program code or logic is ever changed. The improvements are completely risk free and follow IBM standards.

Simply put, VitalSigns for z Tuning is *Check Disk*, *Disk Cleanup*, and *Defrag* for the mainframe, all rolled together. Our software has saved millions of dollars for our clients.

The Tuning Process

The VitalSigns for z Tuning process includes a full I/O subsystem review using our proprietary analysis tools. The review examines every LPAR and all system files, including the contents of every system, master, and user catalog. Resulting reports identify opportunities for performance improvement and DASD optimization across the entire data center.

Our CICS system analyzer reads CICS statistics and matches them to FCTs, PPTs, and TCTs. It then reviews the transaction I/Os, lookaside hit ratios, and file placement within the LSR buffer pools, and rebalances the pools for performance. The review also analyzes all JCL and procs, then creates reports showing areas for improvement and any exceptions to data center standards.

Identifying Areas to Optimize

VitalSigns for z Tuning compares any data center to more than 1,100 other data centers, and compares its files to more than 5,000,000 files in our expert database of Fortune 1,000 companies. This identifies adjustments that even the most seasoned staff may not recognize and assures extraordinary accuracy in our analysis and recommendations. Our software analyzes all libraries and control cards, and creates reports that identify areas for CPU optimization.

Analysis using VitalSigns for z Tuning identifies:

- Areas of greatest concern, such as compliance to data center standards for RLS (record level sharing), striping, extended addressing format, CICS, IDMS log files, etc.
- Hardware upgrades and software changes that have been made without the appropriate adjustments to file parameters.
- Currently-used parameters that are five to ten years out of date for modern data centers.
- Parameters that waste DASD, clog cache controllers, and cause massive unnecessary I/Os and EXCPS.

- Files with unnecessary or incorrect FREESPACE settings, resulting in wasted DASD, unnecessary EXCPS and I/Os, excessive application housekeeping CPU overhead, and excessive system overhead.
- Files in the data center that have grown over time without the necessary adjustments to space allocation, FREESPACE settings, and index control interval sizes.
- Catalog errors that can affect all processing in the catalog and must be corrected before causing ABENDS and outages.
- Files with broken catalog entries so the root cause can be corrected to prevent future occurrences.
- Files with incorrect data control interval sizes.
- Improvements to user catalogs.
- Improvements to system files such as CICS, TSO, SMS, DCAWORK, IDMS log.
- Incorrectly coded parameters:
    - Files using the spanned parameter that shouldn't.
    - Files not using the spanned parameter that should.
    - Typos in file definitions that result in incorrect settings.
    - Files with excessive number of extents.
    - Files with no buffers or incorrect number of buffers resulting in slow processing speeds.
    - CICS online files that waste space in CICS LSR buffer pools.
    - Files defined in TRACKS that should be defined in CYLINDERS or vice versa.
    - Files with excessive CI and CA splitting that can be greatly improved.
    - Files with excessive I/O contention with other files.

The Value of System Tuning

Improved Performance

An SDS tuning will greatly improve system performance. Online transactions will run with faster response times; batch processes also run faster. With this increased productivity, fewer staff operators are needed to run the applications and less overtime is needed for throughput backups.
Cost Savings = Reduced staff hours

Shortened Batch Cycle

When batch processes run faster, more work is completed per day and batch output reports are received sooner.
Cost Savings = No deferring late day transactions

More Online Productivity

Once tuned, online systems can have longer hours of service, processing later in the evening and sooner in the morning.
Cost Savings = Reduced system downtime

Fewer ABENDS

By optimizing settings, batch workloads run with fewer outages and restarts. A smoothly-running data center has faster throughput and less operator intervention.
Cost Savings = Computer processes more data with less downtime

Extended Life for Current System

A well-tuned system can delay costly hardware upgrades and associated software license agreements for CPU and DASD. The existing computer maintains its value and millions of dollars can be retained by the company.
Cost Savings = No capital outlay for upgrades or new system

Shorter Overnight Windows

Overnight batch processing can be expensive. By identifying and reducing bottlenecks, overnight processing will run faster.
Cost Savings = Lower overnight costs

Greatly Improved SLAs

With better performance and fewer problems, a well-tuned system can result in reduced charge back costs to end users and improved Service Level Agreements.
Cost Savings = Reduced charges and increased service to users

Reduced IBM MLC Invoice

Monthly License Charges are usually the costliest IT budget item. VitalSigns for z Tuning trims invoices.
Cost Savings = Reduced IBM charges

Reduces Costs and Speeds Performance

ACF2	Cognos	Legacy Software	PeopleSoft	Top Secret
ADABAS/ Natural SAG	Datacom	MVS	RACF	User Catalogs
Analytics	DB2	Oracle	RLS	VLF
Big Data	Hadoop	OS/390	SAP	z/OS
CICS	HSM	PEGA	System Overhead	z/VM
	IMS			

Saves Up to 20% on Mainframe Costs

Fine-tuning system settings can easily reduce the total cost of mainframe ownership by 5-20%, potentially saving millions of dollars. VitalSigns for z Tuning optimizes the system end to end.

- Excellent ROI.
- Works with all capping technologies.
- Reduces CPU with or without capacity balancing technology.
- Works with all buffering software products.
- Lowers peak use MIPs, MSUs, and CPU.
- Lowers multi-year licensing and billing terms with vendors.
- Lowers service desk staffing levels.
- Proactively identifies potential service issues.
- Audits IT – how good or bad is your system?
- Improves service delivery.
- Improves efficiency of IT assets.
- Lowers MIP spikes without impacting service delivery.

- Uses predictive modeling for accurate analysis.
- Builds new efficiencies into the mainframe cost structure.
- Has expert knowledge of all mainframe operating systems, z/OS infrastructure, DB2, IMS, CICS, and all databases.
- Improves performance, scalability, usability, and availability.
- Configures workloads to handle performance and cost reductions.
- Uses proactive analysis to reduce outages before they occur.
- Increases value of mainframe investments.
- Strategic technology software tool that increases productivity and reduces hardware costs.
- Monitors the z/OS infrastructure to improve response times, prevent slowdowns and outages.
- Accelerates the modernization of analytics and applications.
- Maintains high levels of performance and 24/7 availability.
- Helps conserve MIPS in development and testing.
- Takes advantage of IBM specialty engines.
- Identifies workloads to move to lower-cost platforms.
- Fine-tunes cloud strategy and capacity optimization.
- Helps meet agile infrastructure demands for service and speed.
- Supports disaster recovery requirements.
- Speeds incident and outage restoration times.
- Frees more memory in the IBM z/OS software stack.
- Reduces risk in infrastructure peak workloads.
- Shifts IT budget dollars to other uses.
- Lessens effect of future annual MLC increases.
- Helps meet new methodologies for mainframe workloads.
- Minimizes human error.
- Increases throughput by more efficient use of application resources.
- Supports z9, z12, z13, z196, s360, s370, s390.
- Supports ES9000, XA, MVS, VM-CMS.
- Supports DB2, IMS, VSAM, CICS, CA, PL/I, Fortran, JCL.
- Supports z Systems for cloud and mobile.