IBM System z
Introduction
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Mainframe Gas Gauge

Frequently Asked Questions

Worldwide

IBM

Q1. Is the "Mainframe Gas Gauge" real?

A1. Yes. The IBM System z9™ mainframe has on board environmental monitors that produce stats for KW, BTU/hr and inlet temperature that are displayed in real time.

Q2. Where can I see the gas gauge? Is it under the covers?

A2. The gas gauge stats are displayed on the System Activity Display. This is not a dial on the machine but a screen on the Hardware Master Counsel.

Q3. Do all System z9's have it? Are there any special requirements to enable it?

A3. All System z9's have the potential to have it. The function was made available in May 2007. If the IBM System z9 Business Class (z9™ BC) or IBM System z9 Enterprise Class (z9 EC) shipped after May 11, 2007 it is on it. If the System z9 shipped before May 11, 2007 the microcode must be updated to driver 67 to enable the function.

Q4. Other than curiosity how important are the stats from the gauge?

A4. The stats can be used for a variety of purposes. First and foremost if you do not measure it makes it harder to improve. The System z9 can be the weapon of choice to slash energy bills. Accurate energy consumption data is key to any energy efficiency program.

Planning for IT optimization and energy efficiency saves costs while assisting corporate sustainability. Infrastructure requirements can be planned with more accuracy than using label power which is often 50% higher than actual power.

The "gas Gauge" technology also can enable energy base lining and demonstrating improvements in the data center which can qualify for Energy Efficiency Credits (EEC's).

For more information on EEC's see Announce Nov. 2 and Q and A's associated with it.

Q5. Is the mainframe gas gauge free?

A5. It is a standard no charge function that adds value to System z™ by giving real energy and cooling stats. Both present and future energy requirements can be viewed and calculated on System z, an energy efficient server.

Q6. Where can I find details?

A6. This function was announced in April 2007 as part of the System z9 enhancements and was referenced in the IBM United States Announcement letter 107-190 on April 18, 2007. It was also referenced in the Technical Leadership Library (TLLB) Presentation in the Sales Kit which accompanied the announcement. Here are additional details:
  - **Driver 67 must be installed on the System z9** for this information to display on the System Activity Display (SAD). This driver level must be active on both the Hardware Management Console (HMC) and Service Element (SE). Contact IBM Service for assistance in installing this update.
  - The Power Estimator Tool is available is available on Resource Link™ :
    http://www.**ibm.com**/servers/resourcelink/

Q7. Should I expect to see lots of movement on the display?

A7. Our energy benchmarking team has written a white paper on how System z9 needs very little additional power when going from idle to over 99% utilization. In fact it is normally under 150 watts needed, a very small percentage of the total power. The white paper, "A Power Benchmarking Study on System z9, Applying Energy Efficiency metrics to performance" can be found at the url:
www.**ibm.com**/support/techdocs/atsmastr.nsf/WebIndex/WP101110

Q8. Is there a url for the energy efficiency of System z?

A8. The main site for resources such as announcements, analyst reports, case studies, and the driver manual for the mainframe Gas Gauge is:
http://www-03.**ibm.com**/systems/z/energy_efficiency/
url for sharing: http://www-128.**ibm.com**/developerworks/spaces/greenmainframe
This url has the typical energy consumption numbers by model and other detailed information.

Q9. Tell me about the driver manual for the mainframe gas gauge?

A9. IBM Poughkeepsie's demo team created a presentation that goes through the few steps needed to view the gas gauge. Screen captures show click by click and screen by screen what is needed to access the System Activity Display for stats for the System z9.

Q10. Does the energy vary a lot on an IBM System z9?

A10. Not really. See the benchmarking white paper. What causes increases are adding hardware that is not already in the machine. An example would be adding either a book package or I/O cards. Running the power estimator will enable you to understand the increase before you actual do the add.

Q11. Where can I get the Power Estimator?

A11. It can be downloaded from Resource Link

Q12. If I turned on an IFL how much additional energy would I use?

A12. Our experience is that any engine add within the model (not adding another processor book) the add is extremely small – under 20 watts or less than a compact florescent light bulb. This makes consolidations on System z very attractive from an energy efficiency view as well as software savings which can be substantial.

Q13. Should I run the Power Estimator before I add I/O?

A13. This is optional. Unless a large number of I/O cards are added the energy increase will be small.

Q14. Can I automate and summarize the collection of energy usage data?

A14. Yes. Active energy management and reporting of stats is a direction for all IBM servers. Activity energy management software and Tivoli® will be used to monitor, measure, cap and control energy use. Today the System z9 can measure the energy use without additional software. Cross platform Active energy management is a future direction for Data Centers. Contact your IBM Representative if you want automation assistance for your data. This data may be useful for utility rebates and Energy Efficiency Certificates.

Q16. Can you summarize the value of the mainframe gas gauge?

A16. Measurement is the first step in determining how you can improve. The mainframe gas gauge takes the hype out of green and put the savings in your pocket with proof points for running more energy efficient equipment and data centers with System z9 technology.

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