IBM Systems Director Active Energy Manager for x86, V4.3 helps you monitor and manage the power and thermal usage of your IT environment

Table of contents
1 Overview
2 Key prerequisites
2 Planned availability date
2 Description
4 Product positioning
4 Product number
5 Publications
6 Technical information
8 Terms and conditions
8 Pricing
8 Announcement countries

At a glance

IBM Systems Director Active Energy Manager™ (AEM) V4.3 software, an IBM® Systems Director plug-in, is available on x86 operating systems to help you monitor and manage the power and thermal usage of your IT environment. AEM is a unique energy management software tool that can provide a single view of the actual power usage across systems in your infrastructure as opposed to the benchmarked power consumption.

The main new features in this release are:

- IBM x86 technology-based servers can be monitored for energy consumption and can be energy-managed from AEM.
- PDUs from Server Technologies and Geist can now be monitored. By adding these popular products, AEM continues to increase its scope.
- APC’s InfraStruXure Central V5.1 and V6.0 and Eaton’s Power® Xpert V2.0 are supported for monitoring power and cooling infrastructure.

Overview

IBM Systems Director Active Energy Manager (AEM) V4.3 can effectively manage the energy usage in data centers at the system, chassis, or rack level. Through monitoring of a wide range of equipment, and use of power saving capabilities on IBM equipment, AEM can help in the analysis of data center efficiency, which may result in monetary savings. It can also be used as a tool for implementing data center efficiency changes, through thresholding of AEM-monitored data and setting power management policies. Active Energy Manager is positioned as a key component of IBM’s energy-efficient technologies and services, as part of the Dynamic Infrastructure® strategy in support of Smarter Planet™. It is also part of the New Enterprise Data Center strategy and is a plug-in to IBM Systems Director V6.2.

A data center energy management solution, AEM is designed to measure, monitor, and manage the energy management components built into IBM servers. It also provides a source of energy management data that can be exploited by Tivoli® enterprise solutions such as IBM Tivoli Monitoring. AEM also retrieves thermal and power information via external sensors and collects alerts, events, and data from facility providers related to power and cooling equipment.

AEM V4.3 builds upon AEM V4.2 and offers the ability to:
**Key prerequisites**

IBM Systems Director for x86, V6.2 and updates required for IBM Systems Director  
Active Energy Manager for x86, V4.3

**Planned availability date**

June 25, 2010

**Description**

AEM V4.3, an IBM Systems Director plug-in, is designed to simplify the management of energy consumption across multiple IBM and non-IBM systems. AEM tracks energy use over time and can assist you in determining how to reallocate energy to additional servers without adding additional energy or cooling equipment. When energy is constrained, AEM is designed to allow energy to be allocated on a server-to-server basis. AEM is also designed to track and allocate energy consumption in a manner intended not to affect performance. Sensors and alerts can warn you if limiting energy to a server could affect performance.

AEM is designed to increase your capability to control energy consumption and improve energy use efficiency, which can potentially result in savings and cost reductions. AEM is intended to help you:

- Increase energy use efficiency by controlling energy use across the data center
- Negotiate competitive utility rates based on accurate energy use trend assessments
- Limit server energy consumption by capping maximum energy consumption
- Perform™ server-to-server energy consumption comparisons

By enabling you to meter energy use and trend historical data, AEM is designed to help reduce energy costs in the data center. AEM is also designed to complement and integrate with higher-level management software such as Tivoli. AEM interfaces with the IBM Tivoli Monitoring products and other Tivoli products.

AEM V4.3 can help protect your IT investment through its open design and support for industry standards, which enables heterogeneous physical and virtual management with support for multiple platforms and operating systems.

AEM V4.3 supports the following endpoints: IBM BladeCenter®, Power Systems™, System x®, and System z® servers. New in this release is support for POWER7™ servers, as well as new System x models.

Non-IBM, legacy IBM, and IBM Storage Systems can be monitored through PDU support. In addition, AEM can collect information from select facility providers including Liebert's SiteScan from Emerson Network Power, InfraStruXure Central from APC, and Power Xpert and Foreseer from Eaton. Sensors from SynapSense, iButton, Sensatronics, SmartWorks, and Arch Rock are also supported, in order to provide a view of data center environmental data, and for equipment that does not have its own built-in sensors. AEM V4.3 can perform monitoring and management functions for all supported systems from a single console.
AEM V4.3 provides no-charge monitoring functions and a set of optional chargeable (fee-based) management functions.

**AEM monitoring functions (no charge)**

AEM V4.3 is designed to provide monitoring functions for devices that can connect to select power distribution units (PDUs). This enables monitoring functions for systems that do not have support for AEM; for example, older servers and low- and mid-range storage devices. When these systems are plugged into an intelligent PDU (a smart power strip), AEM is designed to be able to collect energy information from I/O drawers plugged into the PDU, providing a more complete view of energy used in the data center. Additionally, AEM provides users power management functions for intelligent PDUs. Through AEM, users can turn off individual outlets on the PDUs. This allows administrators to prevent the plugging in of unauthorized equipment in a rack. It also provides a way to quickly cut power usage in case of emergencies. New in this release is support for PDUs from Server Technologies and Geist.

*Power trending* is a monitoring function that displays energy use for individual systems or groups of systems over time (in a graph or table format) to help enable you to understand energy use trends within and across your systems.

*Thermal trending* is a monitoring function that displays information on the inlet and exhaust temperatures for individual systems one at a time to help you understand thermal characteristics of your systems. Incorporating this data into one centralized software-based energy use offering allows finite and localized temperature adjustments within the IT shop to help reduce energy costs for cooling.

Support for facility providers is a function that retrieves information from Emerson Network Power’s SiteScan application, APC’s InfraStruXure Central, and Eaton’s Power Xpert and Foreseeer. Numerous attributes associated with the energy usage of power and cooling equipment can be collected, and made available through AEM. This provides a broader scope of energy information within the data center while including a view of facilities equipment. New in this release is the ability to integrate with the newest releases of these products.

Support for sensors is a function that retrieves temperature and power information via sensors. Supported vendors include SynapSense, iButton, Sensatronics, and Arch Rock. In AEM V4.3, this sensor data can now be associated with Systems Director managed resources. This provides a broader scope of energy information across systems within the data center, while including a view of facilities equipment.

In addition, power and cooling relationships can be configured to servers for all of the above PDUs, sensors, and equipment discovered from the infrastructure management providers. This allows energy data and events to be associated with the servers that use them.

**AEM management functions (chargeable)**

*Power capping* is included in the set of optional chargeable (fee-based) management functions. It is designed to allow you to set a maximum energy level per system. If the system starts to consume more than the maximum level set, AEM is designed to throttle the processor to use less energy, which slows down the server. This feature is designed to come into play if it gets too warm in the data center. Setting the cap will ensure that the system will not use more than the cap value, thus allowing the user to allocate less power for that system.

*Power saver mode* is included in the set of optional chargeable (fee-based) management functions for Power systems. It is designed to allow you to manage your energy use as work activity shifts across various demands. Static power saving mode is enabled via an on/off switch, which you can schedule during times of low utilization, or a script can be written so that it can be switched automatically, based on processor utilization. Users can choose to put systems in this mode when they are not being used heavily, or can do this automatically. This can result in significant energy cost savings.
Previously announced part numbers for IBM Systems Director Active Energy Manager for x86

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<th>Description</th>
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<td>46D1008</td>
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Accessibility by people with disabilities

A U.S. Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at


Product positioning

IBM Systems Director Active Energy Manager V4.3 is an IBM Systems Director V6.2 plug-in. It is an energy management solution building block that returns control of energy costs to the client. Active Energy Manager is a cornerstone of the IBM energy management framework.

Active Energy Manager advances the IBM initiative to deliver price/performance per square foot. This offering enables monitoring and management of power usage across systems equipment within the IT and facility infrastructures, which can decrease the cost of computing through improved power utilization and reduced labor cost. Active Energy Manager provides a broader scope of energy information across systems within the data center while including a view of facilities equipment.

By enabling you to meter energy use and trend data, AEM is designed to help reduce energy costs in the data center. AEM is also designed to complement and integrate with higher-level management software such as Tivoli. AEM interfaces with the IBM Tivoli Monitoring products and other Tivoli products.

AEM V4.3 is focused on multisystem resource management of energy across IBM servers and provides heterogeneous monitoring support for systems and IT facilities, enabling clients to manage actual energy consumption.

Product number

All features and part numbers have been previously announced and priced.

Note: Server is a unit of measure by which the Program can be licensed. A Server is a physical computer that is comprised of processing units, memory, and input/output capabilities and that executes requested procedures, commands, or applications for one or more users or client devices. Where racks, blade enclosures, or other similar equipment is being employed, each separable physical device (for example, a blade or a rack-mounted device) that has the required components is considered itself a separate Server. A Proof of Entitlement (PoE) must be obtained for each server regardless of the number of processor cores or partitions in the server on which the program runs and each server managed by the program.
Active Energy Manager entitlements for managing IBM System x servers, IBM Blade Center blades, and IBM Power Systems servers, in the small server tier, are available by ordering IBM Systems Director Active Energy Manager for IBM x86. Active Energy Manager entitlements for managing medium and large IBM servers are not available with IBM Systems Director Active Energy Manager for IBM x86. Entitlements for managing medium or large IBM servers are available by ordering IBM Systems Director Active Energy Manager for Power Systems (5765-AEP) or IBM Systems Director Active Energy Manager for Linux® on System z (5648-AEZ). Further information is available in the Reference Information section of this announcement.

**Evaluation software**

If you download from the Web, you are offered the product to evaluate the AEM management functions for up to 60 days under the terms of the IBM International License Agreement for Evaluation of Programs (ILAE). During the evaluation period, an option to purchase a permanent license will be offered. If a permanent license is purchased, a keyfile will be shipped on a CD-ROM to enable AEM management functions to remain active. When installing the keyfile, no changes are made to AEM and everything will continue to work as it did. If a permanent license is not purchased and installed, then the AEM management functions will be disabled when the evaluation period ends; however, AEM monitoring functions will continue to work after the evaluation period ends. Otherwise, the AEM management functions will be disabled. AEM monitoring functions do not require the keyfile to remain enabled. AEM monitoring functions and the key-enabled management functions are licensed under the terms of the IBM International Program License Agreement (IPLA).

The IBM Systems Director V6.2 Information Center Web site at

[http://publib.boulder.ibm.com/infocenter/director/v6r2x/index.jsp](http://publib.boulder.ibm.com/infocenter/director/v6r2x/index.jsp)

is planned to be updated with information pertinent to IBM Systems Director V6.2 and its associated plug-ins on or before June 25, 2010.

**Publications**

No licensed hardcopy publications are shipped with this program.

Publications are available in U.S. English versions from the IBM Systems Director Information Center.

The IBM Systems Director Information Center provides you with a single information center where you can access product documentation for IBM systems hardware, operating systems, and server software. Through a consistent framework, you can efficiently find information and personalize your access. The IBM Systems Director Information Center is at

[http://publib.boulder.ibm.com/infocenter/director/v6r2x/index.jsp](http://publib.boulder.ibm.com/infocenter/director/v6r2x/index.jsp)

To find information, you can search, browse the contents, follow links from one topic to related topics, and print the topics you want to read offline.

**Services**

**Global Technology Services**

IBM services include business consulting, outsourcing, hosting services, applications, and other technology management.

These services help you learn about, plan, install, manage, or optimize your IT infrastructure to be an On Demand Business. They can help you integrate your high-speed networks, storage systems, application servers, wireless protocols, and an
array of platforms, middleware, and communications software for IBM and many non-IBM offerings. IBM is your one-stop shop for IT support needs.

For details on available services, contact your IBM representative or visit

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For details on available IBM Business Continuity and Recovery Services, contact your IBM representative or visit

http://www.ibm.com/services/continuity

For details on education offerings related to specific products, visit


Select your country, and then select the product as the category.

### Technical information

#### Specified operating environment

**Hardware requirements**

For the latest list of systems supported, visit

http://publib.boulder.ibm.com/infocenter/director/v6r2x/topic/com.ibm.director.plan.helps.doc/fqm0_r_hardware_requirements.html

**Software requirements**

IBM Systems Director Active Energy Manager for x86, V4.3 is dependent on IBM Systems Director and has the same software requirements as the IBM Systems Director server. These software requirements are available from the IBM Systems Director documentation and from the IBM Systems Director Information Center at

http://publib.boulder.ibm.com/infocenter/director/v6r2x/topic/com.ibm.director.plan.helps.doc/fqm0_r_operating_system_and_software_requirements.html

IBM will provide Software Maintenance, which may also be referred to as Subscription and Support, for the free monitoring functions of Active Energy Manager if you have acquired an entitlement to receive Software Maintenance for Systems Director Express® Edition for IBM x86, V6.2.

**Compatibility**

For detailed information about IBM and non-IBM devices, adapters, software, and network operating systems supported with xSeries® servers, visit

http://www-03.ibm.com/servers/eserver/serverproven/compat/us/

Contact your IBM representative or IBM Business Partner, or refer to the *IBM Sales Manual* for information on the compatibility of hardware and software for System x servers. The *Sales Manual* is updated periodically as new features and options are announced that support these servers.

**Limitations**

Refer to the Software requirements section for operating system limitations.
Planning information

Packaging
The IBM Systems Director Active Energy Manager package contains one CD-ROM that includes product installation documentation and files.

Your Proof of Entitlement for this program is a copy of a paid sales receipt, purchase order, invoice, or other sales record from IBM or its authorized reseller from whom you acquired the program, provided that it states the license charge unit (the characteristics of intended use of the program; for example, number of processors, number of users) and quantity acquired.

Information about how you may obtain program services will be provided by the party (either IBM or its authorized reseller) from whom you acquired the program.

AEM will be available on or before June 25, 2010, for electronic download from http://www.ibm.com/systems/management/director/plugins/actengmgr/

This program, when downloaded from a Web site, contains the applicable IBM license agreement and License Information, if appropriate, which will be presented for acceptance at the time of installation of the program. For future reference, the license and License Information will be stored in a directory such as LICENSE.TXT.

Supplies
None

Security, auditability, and control
This product uses the security and auditability features of the system in which it is installed.

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communications facilities.

Global Technology Services
Contact your IBM representative for the list of selected services available in your country, either as standard or customized offerings, for the efficient installation, implementation, and/or integration of this product.

IBM Electronic Services
IBM has transformed its delivery of hardware and software support services to help you achieve higher system availability. Electronic Services is a Web-enabled solution that offers an exclusive, no-additional-charge enhancement to the service and support available for IBM servers. These services are designed to provide the opportunity for greater system availability with faster problem resolution and preemptive monitoring. Electronic Services comprises two separate, but complementary, elements: Electronic Services news page and Electronic Services Agent.

The Electronic Services news page is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. The news page enables you to gain easier access to IBM resources for assistance in resolving technical problems.

The Electronic Service Agent™ is no-additional-charge software that resides on your server. It monitors events and transmits system inventory information to IBM.
on a periodic, client-defined timetable. The Electronic Service Agent automatically
reports hardware problems to IBM. Early knowledge about potential problems
enables IBM to deliver proactive service that may result in higher system availability
and performance. In addition, information collected through the Service Agent is
made available to IBM service support representatives when they help answer your
questions or diagnose problems. Installation and use of IBM Electronic Service Agent
for problem reporting enables IBM to provide better support and service for your
IBM server.

To learn how Electronic Services can work for you, visit

http://www.ibm.com/support/electronic

Terms and conditions

IBM Systems Director Active Energy Manager for x86, V4.3

This product is available under the terms and conditions of the IBM International
Program License Agreement (IPLA). Registration is required in Passport
Advantage® Express in order to acquire the product and register for Subscription
and Support entitlement. Proofs of Entitlement (PoE) are required for all authorized
use.

IBM Global Financing       Yes
Field-installable features Yes
Customer setup             Yes
Model conversions          No
Product availability status New
Licensed programs           Yes

IBM warrants that the program will conform at the date of shipment to the current
specifications, provided that the program is properly used in the specified operating
environment.

If you believe there is a defect in a program such that it does not meet its
specifications, you must notify IBM while program services are available for the
program.

Features and options only

Field installable       Yes
Customer setup          Yes
Support period
Program Services will be available for a minimum of three years. A formal withdrawal will be issued one year prior to end of Program Services.

Optional upgrade       Yes
Licensed programs       Yes

Pricing

For all local charges, contact your IBM representative.

All features and part numbers have been previously announced and priced.

Announcement countries

All European, Middle Eastern, and African countries.

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