Performance Toolbox for AIX Version 3.1

Release Notes

IBM

Performance Toolbox for AIX Version 3.1

Release Notes

IBM

Contents

About this document

The Release Notes topics include late technical information that is not included in other topics, and they highlight new functions for the Performance Toolbox for AIX® Version 3.1 licensed program.

Highlighting

The following highlighting conventions are used in this document:

Bold	Identifies commands, subroutines, keywords, files, structures, directories, and other items whose names are predefined by the system. Also identifies graphical objects such as buttons, labels, and icons that the user selects.
Italics	Identifies parameters whose actual names or values are to be supplied by the user.
`Monospace`	Identifies examples of specific data values, examples of text similar to what you might see displayed, examples of portions of program code similar to what you might write as a programmer, messages from the system, or information you should actually type.

Case-sensitivity in AIX

Everything in the AIX operating system is case-sensitive, which means that it distinguishes between uppercase and lowercase letters. For example, you can use the **ls** command to list files. If you type LS, the system responds that the command `is not found`. Likewise, **FILEA**, **FiLea**, and **filea** are three distinct file names, even if they reside in the same directory. To avoid causing undesirable actions to be performed, always ensure that you use the correct case.

ISO 9000

ISO 9000 registered quality systems were used in the development and manufacturing of this product.

Performance Toolbox for AIX Version 3.1

The following information applies to Performance Aide and Performance Toolbox for AIX Version 3.1, or later.

Note: This software might contain errors that could result in critical business impact. It is highly recommended that you install the latest available fixes prior to using this software. Fixes can be obtained from the Fix Central website (http://www.ibm.com/support/fixcentral).

Performance Aide agent version compatibility

The following table describes the version of Performance Aide agents perfagent and perfmgr that you need to use if you are running the following versions of AIX:

AIX Version	Performance Aide agents perfagent and perfmgr
AIX 5L™ Version 5.3	• perfagent.tools 5.3.0.10 (base media) • bos.perf.tools 5.3.0.10 (base media) • bos.perf.perfstat 5.3.0.10 (base media) • perfagent.server 3.1.0.0 + perfagent.server 3.1.0.17
AIX Version 6.1	• perfagent.tools 6.1.0.0 (base media) • bos.perf.tools 6.1.0.0 (base media) • bos.perf.perfstat 6.1.0.0 (base media) • perfagent.server 3.1.0.10 + perfagent.server 3.1.0.17 (COMMITTED) or perfagent.server 3.1.0.0 + perfagent.server 3.1.0.17 (COMMITTED)
AIX Version 7.1	• perfagent.tools 7.1.0.0 (base media) • bos.perf.tools 7.1.0.0 (base media) • bos.perf.perfstat 7.1.0.0 (base media) • perfagent.server 7.1.0.0 (base media)

Note:

1. Starting with the AIX 5.3 TL11, AIX 6.1 TL4, and AIX 7.1 operating systems, Performance Aide is included with the AIX Base Operating System and versions 5.3.11.0, 6.1.4.0, and 7.1.0.0, respectively.

2. The Performance Aide agent, **xmservd** agent, is replaced by the **xmtopas** agent. The **xmtopas** agent provides all of the functions of the **xmservd** agent; however, the azizo recording capability is isolated and merged into the AIX **topas** recording utility **topasrec**. The **xmtopas** agent calls the **topasrec** utility to start the azizo recording if the xmtopas.cf file exists in /etc/perf.

3. The xmservd.res, xmservd.cf, and xmservd.log* files are renamed to xmtopas.res, xmtopas.cf, and xmtopas.log*, respectively.

4. Version 3.1 of the Performance Aide agent supports the AIX 5.1, AIX 5.2, AIX 5.3 until TL10, and AIX 6.1 until TL3 operating systems. The Performance Aide that is included with the Base Operating System from AIX 5.3 TL11, AIX 6.1 TL4, and AIX 7.1 supersedes Version 3.1.

5. The Performance Toolbox clients (**xmperf** and **3dmon**) can work with existing legacy Performance Aide agents that are installed at the Version 3.0 level.

6. Performance Toolbox and Performance Aide are not supported inside a workload partition (WPAR). To have Performance Toolbox and Performance Aide running in the AIX 6.1 operating system, the minimum level of **perfagent.server** to be committed is 3.1.0.17. If there are any WPARs created before committing **perfagent.server** 3.1.0.17, run the **syncwpar** command to synchronize the global system and the WPARs. For more information about the syncwpar command, see the syncwpar command topic in the AIX Information Center.

7. Version 3.1 of Performance Aide supports the AIX 6.1 operating system only after installing the **perfagent.server** 3.1.0.17 update.

   The perfmgr.* levels that are specified in the preceding compatibility chart are currently included with the latest versions of the Performance Manager media.

8. The AIX 6.1 perfmgr.* is supported only with the following fileset levels:
   - perfmgr.common 3.1.0.0 + perfmgr.common 3.1.0.5
   - perfmgr.network 3.1.0.0 + perfmgr.network 3.1.0.3
   - perfmgr.analysis 3.1.0.0 + perfmgr.analysis 3.1.0.5

AIX release-specific metric information

Performance metrics are available for Performance Toolbox Version 3.1. These metrics are designed to correspond closely to new information reported by the **iostat** and **lparstat** commands. For more information about the **iostat** and **lparstat** commands, see the lparstat command and iostat command topics in the AIX Information Center.

The metric set listing for any AIX release can be retrieved by the PTX **xmpeek** command:

```
xmpeek -l [hostname]
```

Sample additional disk service time metrics

Disk/hdisk*/	Statistics for disk hdisk
Disk/hdisk*/rserv	Average read service time in milliseconds per read block
Disk/hdisk*/wserv	Average write service time in milliseconds per write block
Disk/hdisk*/avgserv	Average service time per transfer
Disk/hdisk*/avgque	Average queue depth
Disk/hdisk*/avgwait	Average wait queue time for read/write transfers
Disk/hdisk*/qfull	Queue full count

Note: Some service time values might be converted from values by block to values by read and write transfers.

Sample virtualization LPAR context and associated metrics

LPAR/	Logical Partition statistics
LPAR/user	Systemwide time executing in user mode (percent)
LPAR/kern	Systemwide time executing in kernel mode (percent)
LPAR/wait	Systemwide time waiting for I/O (percent)
LPAR/idle	Systemwide idle time (percent)
LPAR/lbusy	Logical busy time (percent)
LPAR/pbusy	Physical busy time (percent)
LPAR/physc	Physical processor consumed
LPAR/entc	Entitlement consumed (percent)
LPAR/ent	Entitlement
LPAR/app	Available pool processor
LPAR/vcsw	Virtual CPU context switches
LPAR/maxmem	Megabytes of maximum memory that LPAR can support
LPAR/minmem	Megabytes of minimum memory that LPAR can support
LPAR/memreg	Size in megabytes of one LMB
LPAR/lparnum	Assigned LPAR number
LPAR/shared	SPLPAR flag (0 = dedicated, 1 = shared)

LPAR/	Logical Partition statistics
LPAR/capped	Capped partition (0 = uncapped, 1 = capped)
LPAR/smt	SMT flag (0 = off, 1 = on)
LPAR/maxpcpu	Maximum number of physical CPUs in system
LPAR/minvcpu	Minimum number of virtual CPUs in this LPAR
LPAR/maxvcpu	Maximum number of virtual CPUs in this LPAR
LPAR/mincap	Minimum processor capacity
LPAR/maxcap	Maximum processor capacity
LPAR/capinc	Processor capacity change granule
LPAR/onlinemem	Number of megabytes of current online memory
LPAR/mdisl	Maximum latency between dispatches (nanoseconds)
LPAR/pcpu	Number of active licensed physical CPUs
LPAR/vcpu	Number of current online virtual CPUs
LPAR/lcpu	Number of current online logical CPUs
LPAR/pcpuinpool	Number physical CPUs in shared pool
LPAR/unalloccap	Unallocated capacity available in pool
LPAR/entitledcap	Entitled processor capacity for partition
LPAR/varwght	Variable processor capacity weight
LPAR/unallocwght	Unallocated variable weight in LPAR group
LPAR/minvcpucap	Minimum required virtual processor capacity
LPAR/phint	Phantom interrupts
LPAR/entpct	Entitlement as a percentage
LPAR/hcalls	Number of hypervisor calls
LPAR/hyppct	Percent time spent in hypervisor

Installing Performance Toolbox for AIX filesets

Performance Toolbox for AIX contains two components:

- Manager (client)
- Aide (agent). This function must be installed on every system to be monitored, including the managing client.

The following components are shipped as separate filesets. For AIX 5.1 and later, the filesets must be installed in the following sequence:

1. **perfagent.tools**, **bos.perf.tools**, **bos.perf.perfstat** (from the AIX base installation media)
2. **Java14.sdk** (available on the AIX 5.2 and AIX 5.3 media and the Bonus Pack or download for AIX 5.1)
3. **perfagent.server** (from the Performance Aide Version 3.1 media)
4. **perfmgr.*** filesets (from the Performance Toolbox Version 3.1 media)

Performance Toolbox and Performance Aide use Java™ 1.4. This might require an additional 30 MB of disk space for installation.

Configuration instructions for customers

The **jtopas** client service is turned off by default. This function imposes some overhead on the system that customers do not need if the **jtopas** client is not being used. If you need this full-time Performance Toolbox **jtopas** monitoring and recording function, you can turn it on by performing the following steps:

1. Make a backup copy of the `/usr/lpp/perfagent/jtopas.cf` file before it is modified, and copy the `/usr/samples/perfagent/server/jtopas.cf` file to the `/usr/lpp/perfagent/jtopas.cf` file. This manual copy is needed because the `/usr/lpp/perfagent/jtopas.cf` file does not contain the necessary metrics for the **jtopas** client.

2. Enter the `/usr/samples/perfagent/server/cfg_jtopas add` command to add the following inittab entries in the `/etc/inittab` file:

   ```
   ptxnameserv:2:respawn:/usr/java14/jre/bin/tnameserv -ORBInitialPort 2279 2>&1 >/dev/null
       # Start jtopasServer
   ptxfeed:2:respawn:/usr/perfagent/codebase/jtopasServer/feed 2>&1 >/dev/null # Start jtopasServer
   ptxtrend:2:once:/usr/bin/xmtrend -f /usr/lpp/perfagent/jtopas.cf -d /etc/perf/Top -n jtopas
       2>&1 >/dev/null # Start trend
   ```

3. Run the `/usr/bin/xmtrend -f /usr/lpp/perfagent/jtopas.cf -d /etc/perf/Top -n jtopas 2>&1 >/dev/null` command to start the **xmtrend** daemon if it is not already running.

4. Start the **jtopas** client by typing `jtopas` and pressing Enter.

Migrating from Performance Toolbox Version 3.0 for AIX to Version 3.1 by using SMIT

Migrating from Performance Toolbox and Performance Aide Version 3.0 to Version 3.1 is not supported in AIX 6.1.

If you choose to migrate your Performance Toolbox and Performance Aide for AIX from Version 3.0 to Version 3.1 by using SMIT, you must use the **smit install_latest** fastpath instead of the **smit update_all** fastpath. If the **smit update_all** fastpath is used, errors will occur because of product name changes for Performance Toolbox for AIX.

Electronic fix distribution instructions

You can order and download available fixes. For more information, see the Fix Central website (http://www.ibm.com/support/fixcentral).

Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.

For license inquiries regarding double-byte character set (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

Intellectual Property Licensing
Legal and Intellectual Property Law
IBM Japan, Ltd.
1623-14, Shimotsuruma, Yamato-shi
Kanagawa 242-8502 Japan

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM websites are provided for convenience only and do not in any manner serve as an endorsement of those websites. The materials at those websites are not part of the materials for this IBM product and use of those websites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this

one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM Corporation
Dept. LRAS/Bldg. 903
11501 Burnet Road
Austin, TX 78758-3400
U.S.A.

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement or any equivalent agreement between us.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

All IBM® prices shown are IBM's suggested retail prices, are current and are subject to change without notice. Dealer prices may vary.

This information is for planning purposes only. The information herein is subject to change before the products described become available.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs. The sample programs are provided "AS IS", without warranty of any kind. IBM shall not be liable for any damages arising out of your use of the sample programs.

Each copy or any portion of these sample programs or any derivative work, must include a copyright notice as follows:

© (your company name) (year). Portions of this code are derived from IBM Corp. Sample Programs. © Copyright IBM Corp. _enter the year or years_.

If you are viewing this information softcopy, the photographs and color illustrations may not appear.

Trademarks

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the web at Copyright and trademark information at www.ibm.com/legal/copytrade.shtml.

Java and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates.

IBM ®

Printed in USA