AIX HEALTH CHECK

AIX Health Check product demonstration

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About AIX Health Check

- AIX Health Check is reporting software for IBM AIX systems.
- It scans entire AIX/VIOS systems.
- Runs in just several minutes.
- Generates a report of potential AIX issues.
- It reports only, no changes are made on the system.
- Is based on Best Practices, years of experience and vendor recommendations.
- Tested on thousands of AIX systems.
- Developed by CATE certified AIX engineers.
- Used world-wide.

Benefits of using AIX Health Check

- Allows for pro-active support
  - By using AIX Health Check, you know potential issues up front, before they become a problem
- Helps to improve system security
  - AIX Health Check will warn you for potential security issues
  - AIX Health Check will provide information how to remediate
  - Remediating the security issue, will result in improved system security
- Helps to improve performance
  - AIX Health Check will warn you about potential performance issues
- Helps to improve overall system health
  - Use it to scan your AIX systems, make improvements, run AIX Health Check again
  - Allows for continuous improvement
- Contains over 1,200 checks!
  - More are added regularly
  - Checks are also updated regularly

More benefits

- Educates system administrators on best practices
  - Written in scripting language – source code can be reviewed to understand what commands are run
  - Documentation is added for each check script
- Can be ordered online and downloaded same day
  - If you have an urgent need or major issue, you can start using it the same day
- Comes with documentation, updates and technical support
  - By default available for a year
  - Technical support via email, phone, or desktop-sharing if needed
- Avoids having to hire expensive UNIX consultants
  - Consultants can't check over 1,200 items manually, and may miss key items
  - Using an automated solution avoids missing important items
  - Hiring consultants is much more expensive
- Comes with descriptions that tell you how to resolve any issues found
  - AIX Health Check does not change anything, it reports only
  - Tells you what should be changed and why, and how
  - Provides you commands that you should run to fix issues

Even more benefits

- Scores an AIX system based on the scan
  - The higher the score, the better your system is configured
  - You can rate your own AIX systems
  - When making improvements, you can see the score go up
- Reduces manual labor
  - No more need to check things manually
  - Let AIX Health Check do it for you
  - Reduces man-power needed to manage AIX systems
- Helps system standardization
  - By running it on multiple systems, resolving issues, all AIX systems are configured the same way
- Helps to improve system uptime
  - By preventing issues becoming problems, the system uptime improves
- Reports can be generated in several formats
  - You get to choose the format: HTML, CSV, XML, TEXT
  - Hint: HTML report looks really nice – using colors to identify important items

And even more benefits

- Reports can be sent via email
  - No need to transfer it off the system
  - Have it sent to you when it completes
- Low price
  - One price fits all
- Can be used on an unlimited number of AIX systems
  - No matter how many AIX systems you run this on
  - You pay the same price
  - No processor or system based licensing
- No license keys required
  - No need to enter annoying license keys per system
  - It runs straight out of the box
- Runs in just a couple of minutes
  - Depends on system size, number of users and amount of storage
  - Usually will complete in just a few minutes

Benefits: We're not done yet!

- AIX Health Check is updated on a regular basis
  - You can download the latest version
  - Free updates for a full year
  - With every new OS level, firmware level, PowerHA level, and other software levels, AIX Health Check is updated
  - This aids to keep AIX systems up-to-date

Supported

- Hardware: Power4 through Power8
- Operating system: AIX 5.2 through AIX 7.2
- Clustering: PowerHA/HACMP 5.4.1 through 7.1
  - Clusters up to 2 nodes supported
- Both AIX and VIOS
- Also works in WPARs
- Does not check HMCs
  - Free alternatives for scanning HMC are available
  - Treat HMC as a black box solution, don’t make any changes on HMCs

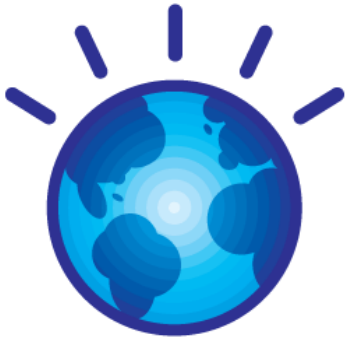
Requirements

- Runs only as user root
  - You need to know the root password to run AIX Health Check
  - Does NOT change anything on your system
  - Will only create temporary files and report files
    - Temporary files will be cleaned up when AIX Health Check completes
  - Software completely written in scripting language, so you can check what it does - No binaries included

- HTML reports require
  - Microsoft Internet Explorer 8 or higher
  - Mozilla Firefox
  - Google Chrome
  - Microsoft Outlook 2003/2010 or Windows Live Mail (to receive HTML-style reports via email)

How it works

- Download it online
  - Make sure you get the latest version
  - Download can be automated directly to AIX systems
  - A license for AIX Health Check allows access to updates for a year
- One tar image
  - Download onto your system in a folder of your choice
  - Un-pack the tar image
- Execute
  - Run it through the master script: checkall.ksh
    - # checkall.ksh
  - Report is generated minutes later
  - Options can be used with checkall.ksh to adjust behavior



Report structure

- Each report consists of:
  - An overview of options selected when running AIX Health Check
    - Many options are available to change the behavior of AIX Health Check
  - A system configuration section
    - Contains a quick overview of your system
    - With key system information
  - Output of check scripts
    - Output of all check scripts that are run
    - Descriptions can be added
    - Any successfully completed check scripts can be excluded from the report
  - End results
    - Includes a system score

Report: options selected

- Provides an overview of what options were used to run AIX Health Check:

```
2015-03-31 14:37:36: OPTIONS SELECTED
-------------------------------------

2015-03-31 14:37:36: Version:         14.06.04
2015-03-31 14:37:36: Start at:        03/31/2015 14:37:35 CDT
2015-03-31 14:37:36: Options:         -gdhvm support@aixhealthcheck.com
2015-03-31 14:37:36: Output file:     checkall_hostname.html
2015-03-31 14:37:36: Display:         WARNING and ERROR checks only
2015-03-31 14:37:36: Descriptions:    Yes
2015-03-31 14:37:36: Output type:     HTML
2015-03-31 14:37:36: Email output to: support@aixhealthcheck.com
2015-03-31 14:37:36: # Checks:        856
```

- More on available options later on in this presentation

Report: system configuration section

- Provides a short overview of the system:

```
2015-03-31 14:38:57: SYSTEM CONFIGURATION
-----------------------------------------

2015-03-31 14:38:57: Hostname:        hostname (hostname.domain.com)
2015-03-31 14:38:57: IP Address:      10.11.12.13
2015-03-31 14:38:57: IP Assignment:   Static
2015-03-31 14:38:57: Subnet Mask:     255.255.255.0
2015-03-31 14:38:57: Default Gateway: 10.11.12.1
2015-03-31 14:38:57: Name Server(s):  10.16.4.3 10.16.4.4
2015-03-31 14:38:57: LPAR / VM:       5 hostname
2015-03-31 14:38:57: OS Level:        AIX 6.1.8.15 6100-08
2015-03-31 14:38:57: Model:           IBM,9119-FHB Power 795
2015-03-31 14:38:57: Serial Number:   02QG3GR
2015-03-31 14:38:57: Firmware Level:  AH760_078
2015-03-31 14:38:57: Kernel:          64 bit
2015-03-31 14:38:57: Hardware:        64 bit
2015-03-31 14:38:57: Processor Type:  PowerPC_POWER7
2015-03-31 14:38:57: CPU Clock Rate:  4004 MHz
2015-03-31 14:38:57: rPerf:           34.90 rPerf estimated
2015-03-31 14:38:57: CPUs:            3
2015-03-31 14:38:57: Logical CPUs:    12
2015-03-31 14:38:57: Capacity:        Min: 0.10 Entitled: 0.40 Max: 16.00 Increment: 0.01
2015-03-31 14:38:57: Physical CPUs:   10
2015-03-31 14:38:57: System type:     mode=Uncapped type=Shared-SMT-4 weight=128 smt=4
2015-03-31 14:38:57: Virtual CPUs:    Desired: 3 Min: 1 Online: 3 Max: 32
2015-03-31 14:38:57: Memory:          32768MB
2015-03-31 14:38:57: Memory Settings: min: 32768MB, desired: 32768MB, max: 98304MB, online: 32768MB
2015-03-31 14:38:57: Paging Space:    12288MB (1% in use)
2015-03-31 14:38:57: Uptime:          02:38PM up 50 days, 9:02, 1 user, load average: 2.31, 1.91, 1.71
```

Report: checks section

- Provides information on all check scripts that have run
- Descriptions can be added
- Successfully run check scripts can be excluded from the report

```
------------------------------------------------------------------------------------------------
2015-03-31 14:45:06: Running check script 205 of 937: checketcrcshutdownperms.ksh

Description:
------------

Check the permissions of /etc/rc.shutdown.

Output:
-------

The permissions of /etc/rc.shutdown are -rwxr-xr-x, but should be -rwx------.
Run: chmod 700 /etc/rc.shutdown

2015-03-31 14:45:06: Check checketcrcshutdownperms.ksh reported ERROR(s): returncode 1
2015-03-31 14:45:06: Runtime: 1 second(s)
2015-03-31 14:45:06: 21% complete - 732 checks to go.
------------------------------------------------------------------------------------------------
```

Report: End results

- Provides score of a system
- Shows the amount of check scripts that ended in error or warning
- Tells you where to find the log file

```
2015-03-31 14:56:24: RESULTS
----------------------------

2015-03-31 14:56:24: Run time for all checks             : 344 seconds
2015-03-31 14:56:24: Total number of checks              : 856
2015-03-31 14:56:24: # Checks with result OK             : 792
2015-03-31 14:56:24: # Checks with result WARNING        : 9
2015-03-31 14:56:24: # Checks with result ERROR          : 55
2015-03-31 14:56:24: Score [Percentage OK]               : 93.57 %

2015-03-31 14:56:24: For details see logfile             : /ahc/checkall_hostname.log
```

Options available

- Many options are available*:
  - “-g” suppresses reporting any checks that finish successfully
  - “-m” used to send the report via email
  - “-n” used to only send an e-mail if issues are found
  - “-s” used to select what checks to run
  - “-v” provide verbose output on the screen while running
  - “-d” add descriptions with help info to the report
  - “-h” generate an HTML style report
  - “-l” generate a LOG (text) style report
  - “-c” generate a CSV style report
  - “-x” generate an XML style report
  - “-u” provides usage information
  - “-w” used to specify the width of the output
  - “-f” used to specify the location of the output file
  - “-b” does not show system configuration, copyright, end result
  - “-e” used to exclude all the check scripts, runs only system configuration
  - “-E“ used to exclude specific check scripts
  - “-C” used to specify categories (or groups) of scripts to be run

*Details can be found on http://www.aixhealthcheck.com/documentation#nr8

Creating HTML reports

- Use the “-h” option
- Looks much nicer!

Options selected

Version:	12.11.30
Start at:	11/30/2012 22:54:36 EST
Options:	-dhvm support@aixhealthcheck.com
Output file:	checkall_erp01.html
Display:	All checks
Descriptions:	Yes
Output type:	HTML
Email output to:	support@aixhealthcheck.com
# Checks:	836

XML reports

- Can be used in any XML tool

HTML reports use colors

- Colors help to identify important items quickly

checkemptyvg.ksh	
Script run at:	2012-11-30 22:55:27
Runtime:	1 second(s)
Returncode:	1
Description:	Check if any volume group is empty, or only contains JFS/JFS2 log logical volumes. If that's the case, the volume group is not used, and can be removed.
Output:	Volume group oracle01vg is empty or only contains JFS/JFS2 log logical volumes.

checkenetvsent.ksh	
Script run at:	2012-11-30 22:55:27
Runtime:	0 second(s)
Returncode:	0
Description:	Check if there are interfaces defined for an ethernet adapter that does not exist. For an interface, such as en0, to be able to work, the parent adapter, ent0, should also exist. If it does not exist, either run cfgmgr to configure it (again), or remove the interface itself, if it's no longer required.

Reduce lengthy reports

- Reports can become very lengthy with over 1,200 checks
- Use the “-g” option to exclude any checks that complete successfully
- This will only display results with status Warning (2) or Error (1)

Results

Run time for all checks:	126 seconds
Total number of checks:	736
# Checks with result OK:	728
# Checks with result WARNING:	1
# Checks with result ERROR:	7
Score [Percentage OK/WARNING]:	99.04 %
For details see logfile:	/ahc/checkall.html

- In the example above:
  - The report would exclude 728 successful checks
  - Display only checks with end status warning (1 script) or end status error (7 scripts)
  - This allows you to focus on only the important items

Reduce lengthy reports (continued)

- Make use of the –E option
  - Use this option to exclude scripts that aren't relevant to your environment.
  - For example: checkall.ksh –E checkopensshlevel,checkopenssllevel
- Make use of the –C option
  - Use this option to use a specific category (or categories) of scripts only.
  - For example: checkall.ksh –C security
  - This allows you to focus on a specific area of your interest.
- Run AIX Health Check on one system first
  - AIX systems in a organization are usually configured the same way (because of the use of build documentation or daily/standard operational procedures).
  - Run AIX Health Check on one system first, but apply remediation to all serves in the environment.
  - Once items of first system have been remediated, move to second and third system. The report on the second and third systems will be much shorter, because the remediations of the first system have already been applied.

Creating a server inventory

- AIX Health Check includes many scripts that generate inventory-style information
- Very useful if you wish to keep a copy of the server configuration, or a so-called “run book”
- Use option “-C inventory” to generate an inventory report
- Save the inventory in regular text, CSV, XML or HTML format

Running categories of scripts

- The -C option allows several categories (or groups) of scripts to be run
- Can be used to focus on certain aspects of the AIX server, such as system security
- Categories can be combined as well
- Many available categories, such as:
  - Backup, security, inventory, cluster, hardware, mail, performance, capacity, network, redundancy, booting, etcetera*

* For a full list of available categories, see: http://www.aixhealthcheck.com/documentation#nr10

When to use AIX Health Check?

- AIX Health Check is beneficial in several stages of AIX lifecycle
  - Run it on a daily basis
    - Can be automated to run from cron
  - Run it before a system moves into production
    - Make sure the system was installed and configured correctly
    - Avoid having to make changes when the system is in production later on
  - Before and after doing a change on a server
    - Make sure no issues exist before applying patches, and that no adverse situations were introduced as part of a change
  - During audits
    - Make sure a system is compliant with company and federal regulations
  - During yearly performance reviews
    - Determine if the system administrators have taken good care of the AIX servers
  - Before or during any Bare Metal Restore or Disaster Recovery (exercises)
    - Validate that an AIX server is recovered correctly
  - When taking over AIX systems from others or other accounts
    - Perform an initial quality scan
  - As part of the daily routine to check and monitor systems
    - Not daily reviewing AIX systems, can have costly consequences

AIX best practices

AIX Health Check is based on best practices

- Through experience:
  - Developed by IBM certified Advanced Technical Experts
  - All of our associates have completed CATE certification
  - Based on years of experience supporting thousands of systems
  - Based on common mistakes by system admins
- Through internationally recognized standards:
  - SAS70 audits (as part of Sarbanes-Oxley - SOX)
  - HIPAA (for healthcare organizations)
  - DISA (Defense Information Systems Agency)
  - PCI DSS (Payment Card Industry security standards)
  - FFIEC (Federal Financial Institutions Examination Council)
- Trough vendor recommendations:
  - IBM documentation, service bulletins, Redbooks, AIX Security Expert
  - Other vendors, like EMC

Your security

- Your AIX system security is important to us
- Reports generated by AIX Health Check contain a lot of system information, and therefore should be treated confidential
- AIX Health Check does not transmit ANY system data
- Source code is available to you when you license AIX Health Check
  - Allows you to confirm exactly what it does
  - No binaries included
- For technical support
  - We may require a copy of a recent report generated by AIX Health Check
  - You are encouraged to remove any data that is confidential from the report
  - No reports are retained, when technical support completes
- For more information, read our policy at:
  - http://www.aixhealthcheck.com/diag

Sample reports

Here are examples of reports created by AIX Health Check

- HTML style report, including 605 checks, generated on an AIX 6.1 system with thousands of logical volumes, used in an Oracle RAC configuration. Logging of all scripts is enabled with descriptions turned on.
  www.aixhealthcheck.com/sample/checkall_testaix11_hdm.html
  [HTML - 2.17 MB]
- HTML style report, the same server as the first example, but this time only Logging of all error/warning scripts enabled with descriptions turned on.
  www.aixhealthcheck.com/sample/checkall_testaix11_ghdm.html
  [HTML - 46.8 KB]
- Text style report, which includes all available checks. This is in basic text, which can be used for viewing on UNIX systems.
  www.aixhealthcheck.com/sample/checkall_test-1.log
  [TEXT - 402 KB]
- CSV style report, easy for importing into Excel or into a database, which includes all available checks.
  www.aixhealthcheck.com/sample/checkall_test-1.csv
  [CSV - 36 KB]
- An XML style report, which can be used in any XML tool, including only failed checks.
  www.aixhealthcheck.com/sample/checkall_test03.xml
  [XML - 66 KB]

Trial version

- Try it out yourself
- Test the first 50 checks of 1,200+ checks included in the full version
- Dowload at:
  - http://www.aixhealthcheck.com/demo
- Includes full instructions how to run the trial version
- If you have any questions:
  - Contact us by phone or email (support@aixhealthcheck.com)
  - Sent us a question online (http://www.aixhealthcheck.com/contact)

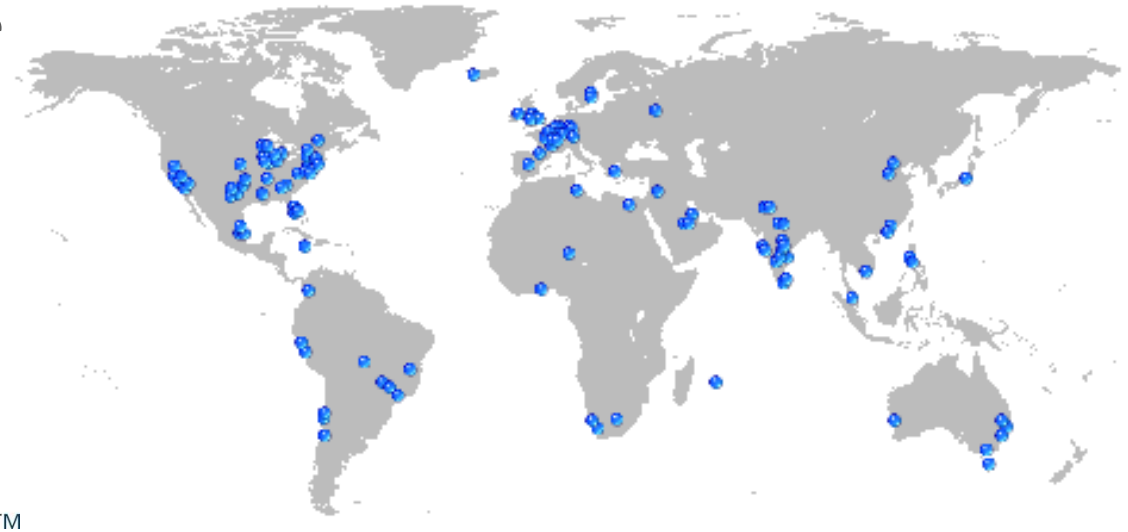
Technical support

- AIX Health Check comes with technical support
  - Via phone, conference call or email
  - Valid during entire license period
- Support range:
  - Installation assistance
  - Troubleshooting (potential) failures in the software
  - Creating fixes
  - Answering questions how to resolve certain issues in clients' IT environment
- Requires:
  - Provide AIX Health Check with sample report showing an issue
  - Or alternatively, a screenshot with the issue
  - Any other related information*

* Information provided by client is treated confidentially and disposed of once issue has been resolved.

About our organization

- Started in 2004 by UNIX enthusiast around the world
- Developed from best practice documentation into automated solution
- Fully virtual organization
  - We don't have expensive offices, allowing us to work low-cost
  - And provide our customers a low-cost solution
- We only hire certified top-notch UNIX professionals
  - With many years of experience
- Customers world-wide
- IBM Business Partner



Business Partner IBM®

TM

Pricing

- Save the best for last!
- Low pricing
  - AIX Health Check can be licensed for 4,950 USD
  - Irrelevant how much AIX servers it is run on
  - No processor- or system-based licensing
  - There's just one price
  - No license keys; no licensing daemons to run
  - Comes with a 30-day money back guarantee
  - We like to keep things simple!
- More details at:
  - http://www.aixhealthcheck.com/price

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All statements regarding AIX Health Check future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.

Performance is based on measurements and projections using standard benchmarks in a controlled environment. The actual throughput or performance that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput or performance improvements equivalent to the ratios stated here.

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