IBM AIX Operating System

Release and Service Strategy

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Overview

IBM enhanced the AIX® operating system (OS) Release and Service Strategy in 2007 as part of the ongoing effort to improve the manageability and stability of the AIX operating system for our clients. The enhanced strategy will provide clients with:

- Longer support for each AIX OS Technology Level update (formerly known as *Recommended Maintenance Levels)*
- Improved serviceability for the AIX OS throughout the life of each Technology Level
- Support for some new hardware on previous Technology Levels

These changes were made in response to client requests to lengthen the amount of time each Technology Level is supported and to reduce the impact of adding new IBM hardware to the client's I/T environment.

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The Previous Release and Service Strategy

The AIX OS Release and Service Strategy builds on the previous AIX OS release strategy that was introduced in February 2006. The 2006 strategy (see Figure 1) renamed the "Recommended Maintenance Level" update packages to "Technology Levels" (TL). Technology Levels are planned to be released twice per year, with most software functionality enhancements being delivered in the second half of the year.

The 2006 strategy also included new service delivery packaging such as "Service Packs" and "Concluding Service Packs". Service Packs and Concluding Service Packs were intended to include only critical client fixes. These new service packaging provided for more consistent service and easier administration of AIX OS software.

However, the most significant change introduced with the release and service strategy changes of 2006 was to extend support for a Technology Level (Maintenance Level) to approximately one year. Prior to this change, support for a Recommended Maintenance Level ended when the subsequent Maintenance Level was released.

The year of support for each Technology Level was broken up into two phases. During the first phase, typically the first six months, clients received software fixes via Program Temporary Fixes (PTFs), Service Packs and Interim Fixes. During the second phase, which started when the subsequent Technology Level was released, clients could receive software fixes by installing a Concluding Service Pack, and then installing Interim Fixes for their specific issue.
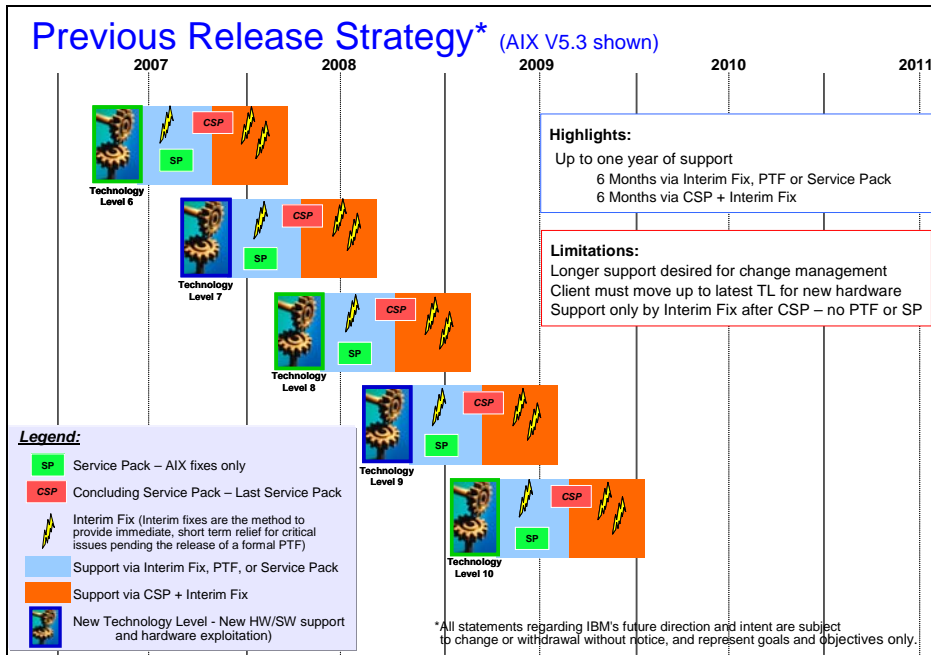
Figure 1: AIX OS Release and Service Strategy - 2006

AIX OS clients were pleased with the changes introduced by the 2006 release strategy, but asked IBM to go further and provide longer and more manageable support for the AIX operating system. The AIX OS development, support, marketing and executive management teams worked together to address those additional requirements. The 2007 AIX OS Release and Service Strategy is the culmination of that work.

AIX OS Release and Service Strategy

The new release strategy offers three key enhancements:
- Longer support for each Technology Level
- Improved AIX OS serviceability
- Support for some hardware on previous Technology Levels

Longer Support for each Technology Level

The Release Strategy created in 2007 (Figure 2) extends the support for each Technology Level update to approximately two years from the introduction of the Technology Level update. This means that clients with a Software Maintenance Agreement for the AIX OS will be able to contact IBM support for defect support during that two year period without having to move up to the latest Technology Level update.

For example, a Technology Level introduced in the first half of 2007 will be supported into the first half of 2009. Since each Technology Level will be supported

for approximately two years and IBM plans to release two Technology Level updates per year, IBM will eventually be supporting four Technology Levels for each AIX OS release.

There are always variations in the release dates of Technology Level updates from year to year, so some Technology Levels will be supported for slightly more that two years and some will be supported for slightly less than two years. A two year service life for each Technology Level is an objective, not an absolute limit. The service life of Technology Levels will also be limited by the end of service life for the underlying AIX OS release.

The intent of this strategy is to provide clients running the AIX OS with support for software problems without having to upgrade to the latest Technology Level. However, there may be cases which, due to architectural changes or the pervasive nature of a particular fix, may require a client to move up to a later Service Pack, Technology Level update or AIX release to resolve a software issue.
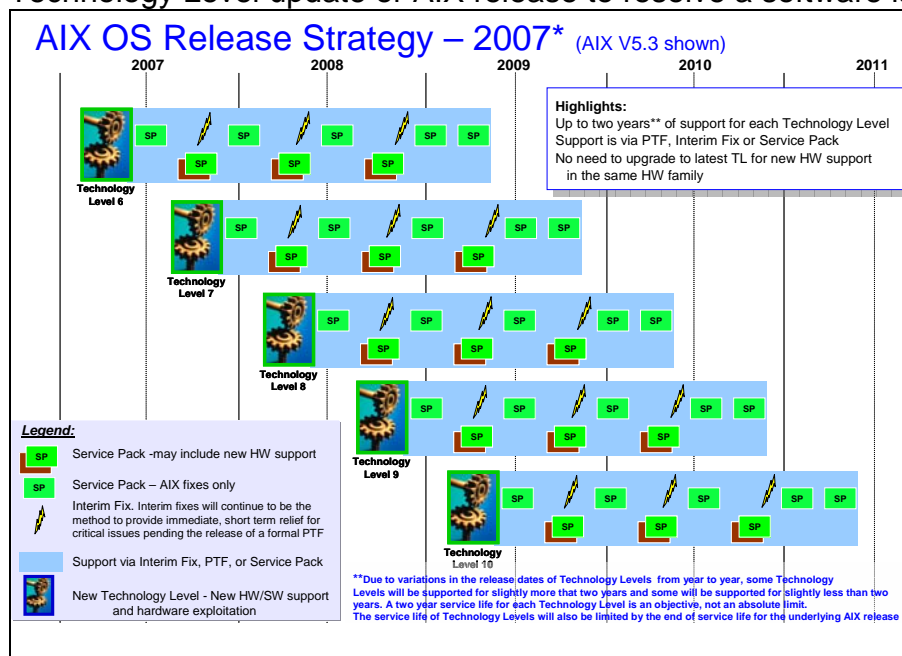

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Figure 2: AIX OS Release and Service Strategy - 2007

Improved AIX OS Serviceability

One of the principal changes between the 2006 and 2007 AIX OS Service and Release strategies is the manner in which clients may obtain fixes for the AIX OS. In the 2007 strategy, clients use the same methodology and fix packages throughout the entire release.

Under the 2007 strategy, clients maintain their AIX operating systems by installing Service Packs (SP), Program Temporary Fixes (PTF) or Interim Fixes for the entire support life of the Technology Level update. This will improve the manageability of

the AIX OS software by reducing complexity and providing more consistency. The Concluding Service Pack is no longer used. In the previous release and service strategy, the Concluding Service Pack was used to provide a baseline for support for the second phase of support. Since the new strategy uses a consistent service methodology throughout the entire service life of a Technology Level update, and never relies solely on Interim Fixes for support, the Concluding Service Pack is no longer needed.

Support for Some Hardware on Previous Technology Levels

Throughout the history of the AIX operating system, support for new hardware was only included in the latest Technology Level (or Recommended Maintenance Level). This required clients to upgrade to the latest service level if they wished to integrate new systems into their computing environment. This requirement often caused clients difficulty in rolling out new hardware into their existing environment.

AIX OS support for new hardware is typically broken into two categories: *support* and *exploitation.*

To *support* new hardware, the AIX OS has to undergo relatively minor changes to recognize the new hardware at boot time. If the AIX OS does not recognize the new hardware, it may fail to boot or only run in a degraded mode. The changes to *support* new hardware typically include updating a boot time table to determine the processor type or the creation of new boot media to recognize new I/O or both.

To *exploit* new hardware, the AIX OS may have to undergo more pervasive changes to take full advantage of the new hardware. This could result in changes to kernel components such as the Virtual Memory Manager (VMM) to exploit the new page sizes supported by a new processor.

The AIX OS Release and Service Strategy for 2007 offers IBM the opportunity to provide *support* for new hardware on previous Technology Level updates. The net effect is that clients will, in some cases, be able to use new hardware on previous Technology Levels after installing a Service Pack.

As seen in Figure 3, many of new hardware offerings will be *supported* on previous Technology Levels. In all cases, the client will be required to install the latest Service Pack for a given Technology Level that includes support for the new hardware.

The support for new hardware will typically be limited to types such as speed increases, new processors running in compatibility mode and new I/O devices. Pervasive changes such as the introduction of a new processor family, or significant new I/O busses or the introduction of any hardware that requires significant or pervasive changes to the AIX OS will not be supported on previous Technology Levels. Examples of past hardware offerings that could potentially have been

supported on previous Technology Levels include the IBM POWER5+™ processors and new I/O devices released with the POWER5+ processor-based systems.

Please note that *exploitation* of new hardware offerings will often require installing the latest Technology Level Update or in some cases, moving up to the latest AIX OS release.

New Hardware Supportability*

Degree of hardware change	On prior TLs plus latest Service Pack	On the latest Technology Level
Processor Speed Increase Only (No AIX Code Changes)	Yes	Supported
New Processor in Compatibility Mode (No AIX Code Changes)	Yes	Supported
New Processor in Family (Recognize New Processor)	Yes	Supported
New I/O (New Device Drivers)	Yes	Supported
New Technology (Significant/pervasive)	No	Yes

Note: Exploitation of new hardware features will require moving up to the latest TL or in some cases, moving up to the next AIX release

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Figure 3: Support for some new hardware on previous Technology Level

This new capability will provide clients with additional choices for how they can deploy new hardware into their existing I/T environments.

As shown in a hypothetical case in Figure 4, if a client was running on Technology Level 6 (TL6) and wished to use new hardware such as a new server model within an existing processor family, the client could choose to upgrade to the latest Technology Level (in this case Technology Level 7), or they could install the latest service pack (in this case Service Pack 3) on top of Technology Level 6.

In this particular case, either of these choices would have been tested and supported by IBM.

In the diagram in Figure 2, you will note that each Service Pack that lines up with a new Technology Level is denoted by a double box. This double box indicates that those service packs *may* include support for hardware released with the later Technology Level updates in addition to critical fixes. In some cases, new hardware may be supported on up to three previous Technology Levels.

The possibility of supporting new hardware would be limited by the restrictions associated with Figure 3 as well as the possibility that the new hardware support

might be dependent on architectural changes made in a later Technology Level update. Support for new hardware on previous Technology Levels is limited by a number of factors and should not be expected for all new hardware.

As stated previously, *exploitation* of new hardware features will almost always require installation of the latest AIX Technology Level update.
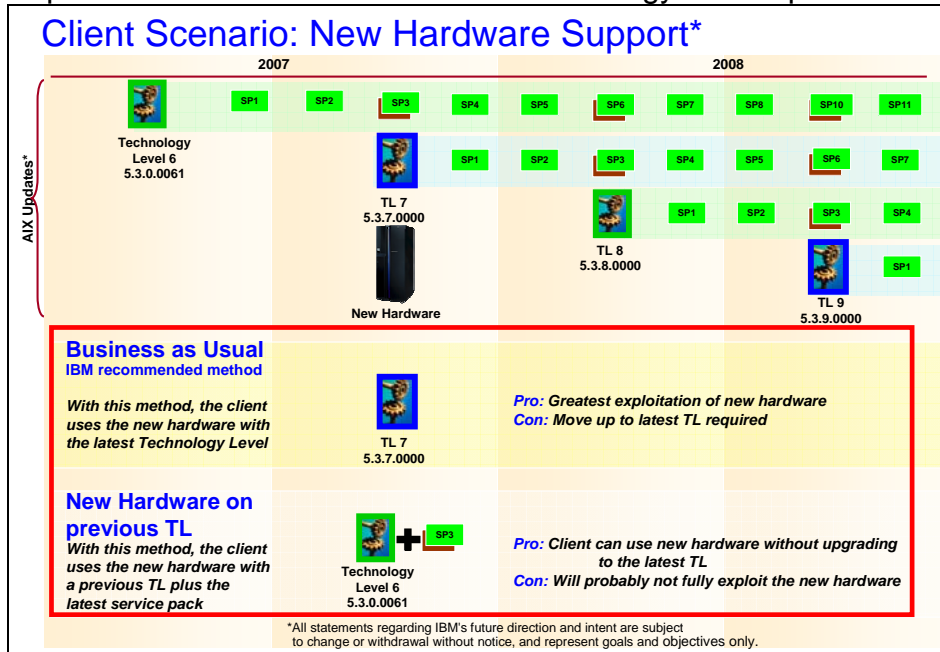

Figure 4: Scenario - New Hardware Support

When supporting new hardware on previous Technology Levels, one important consideration is the availability of boot support to allow clients to boot and perform a fresh or complete overwrite installation of a previous Technology Level of the AIX OS on the new hardware. This capability will sometimes require new boot media because the original boot media that was released with the previous Technology Level may not be able to boot on the new hardware.

IBM intends to provide clients with several ways to obtain new boot media for previous Technology Levels including:

- Create a *mksysb* or NIM install image based on the previous Technology Level plus the appropriate Service Pack that enables support for the new hardware
- Download new boot images for previous Technology Levels from IBM Electronic Software Distribution Web site.
- A Programming Request for Price Quotation (PRPQ) process will be available for clients who require physical boot media and are unable to download the new boot images from the Electronic Software Distribution Web site.
- Clients can order new boot media from IBM Support, but will only be able to obtain boot media for the most recent Technology Level

Transition to the New Strategy

The AIX OS Release and Service Strategy that was implemented in 2007 for the AIX Version 5.3 OS starting with the Technology Level 6 update. Technology Level 6 is the first Technology Level update that will be supported for up to two years. This new release and service strategy will also apply to AIX Version 6.1. This new strategy will not apply to previous Technology Levels for AIX V5.3 OS or previous versions of AIX such as the AIX Version 5.2 OS, or to Licensed Program Products.

Previous Technology Level updates for the AIX V5.3 OS such as Technology Level 4 (released April 2006) and Technology Level 5 (released August 2006) will be supported for at least one year under the 2006 release and service strategy. A Concluding Service Pack was released to AIX V5.3 Technology Level 4 (in August, 2006) and for AIX V5.3 Technology Level 5 in June 2007.

The 2007 strategy will require changes to the Version/Release/Modification/Fix (VRMF) encoding used for AIX OS fileset levels which are displayed by commands such as *lslpp*. Starting with AIX V5.3 Technology Level 7 (and on AIX V6.1), the AIX OS will use the VRMF encoding as seen in Figure 5. These changes will not affect the installation of Licensed Program Products.
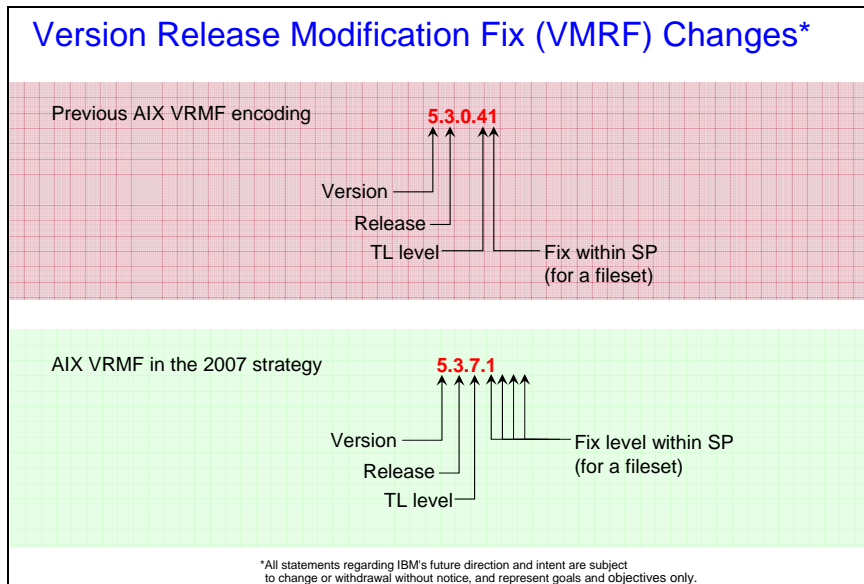
Figure 5: VRMF Changes

Other Changes

Clients will see other changes as a result of IBM implementing the new 2007 strategy:

- The naming convention for Service Packs will change. For example, under the old naming convention, the first Service Pack for Technology Level 6 would be "5300-06-01" (53 TL6 SP1). Under the new naming

convention, the month and week of the date the Service Pack is released will be used as part of the name of Service Pack—as a result, Service Pack 1 will be named to 5300-06-01-*YYWW* (where YY is the 2-digit year and WW is the 2-digit week the SP is available).

- IBM will continue to issue PTFs for older Technology Levels. Because of this, multiple Authorized Program Analysis Reports (APAR) will be issued for the same problem, one for each supported Technology Level. Each APAR will be specific to a particular Technology Level. For example, a problem reported for Technology Level 6 may be APAR IY123456, but the same problem would also be identified on Technology Level 8 as IY654321.

- IBM will be supporting significantly more levels of the AIX OS than previously. As a result, Service Packs and PTFs will be issued less frequently than in the past.

- The *oslevel* command and IBM Support and Electronic Software Distribution Web site will be modified to reflect the new Service Pack naming conventions and longer service life for Technology Levels.

Additional Information

The IBM Service and Support Best Practices for UNIX® servers Web page at http://www14.software.ibm.com/webapp/set2/sas/f/best includes additional information on the AIX Release and Service Strategy, and best practices for managing the AIX OS and Power™ Systems servers.

Summary

The providers of all software, including platform software such as the AIX operating system, must balance the clients need for stability against the need to enhance the software to provide new functionality. The changes introduced with the new AIX OS Release and Service Strategy in 2007 balance those two conflicting goals and provide our clients with significant improvements in the manageability of the AIX operating system.

The increased service life, better manageability and support for new hardware on previous Technology Levels provided by the new strategy are in direct response to our client's requirements.

As stated earlier, this new strategy represents goals and objectives of IBM and is subject to change, but our clients understand that substantial changes such as this new strategy are an indication of the commitment that IBM has towards improving the capabilities of the AIX operating system.

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