



IBM AIX 5L Operating System Service Strategy Details and Best Practices

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Introduction

IBM is enhancing the AIX 5L™ operating system (OS) Release and Service Strategy in 2007 as part of the ongoing effort to improve the manageability and stability of the AIX 5L operating system for our clients. The enhanced strategy will provide clients with:

- Longer support for each AIX 5L OS Technology Level update (formerly known as Recommended Maintenance Levels)
- Improved serviceability for the AIX 5L OS throughout the life of each Technology Level
- Support for some new hardware on previous Technology Levels

The previous paragraph came from the IBM AIX 5L Operating System Release Service Strategy paper.

This paper will go deeper into some of the changes, give some best practice scenarios and discuss some of the more advanced function available.

This paper will discuss:

- Contents of a Service Pack (SP)
- Changing the names of the SPs (adding release dates)
- Recommendation to apply the whole SP instead of just individual PTFs
- SP release schedules
- Rebuilding your boot media if using an SP on an existing TL for new hardware boot support
- Why move to a new TL?
- Why move to a new SP?
- Interim fix support
- Security interim fixes

The new service strategy will only be used in AIX 5L Version 5.3 OS, starting with TL6. The CSP for TL5 will be released soon after TL6 is released and interim fix support will still be offered on TL5 for six months. If you are currently running with TL5, we would recommend moving to TL6 or TL7 as soon as you are able. If you are currently using TL4, then it would be better to skip TL5 and move straight to TL6 during your next maintenance window opportunity.

AIX 5L Version 5.2 OS not use the new Service Strategy. When the final TL level is released, new SP's will be released until it goes end-of-life.

Contents of a Service Pack

Service packs contain fixes for:

- Customer reported problems (APARs) that cannot wait until the next TL
- Critical problems found by development or test teams
- Very, very limited number of changes to support new hardware. Examples: New device drivers, new ODM entry to allow for configuration of a new class or type of device, small changes in kernel to recognize a new processor speed, etc.

The only changes that are allowed in an SP are limited to corrections that do not change behavior, cause regression or add new functionality. The development team employs a fix rating system to enforce this. New function, both for hardware exploitation and software features, is only shipped in Technology Levels or new releases.

Changing the names of the service packs (adding release dates)

Starting with TL6, Service Packs will be labeled with their release date, using the YYWW format, where MM is the 2-digit month and WW is the 2 digit week the SP is available. For example, if 5.3 TL6 SP3 was released in the first week in September 2008, it would be called 5300-06-03-0836 (`oslevel -s` will report this new level name). The nice thing about this is not only can you tell when the SP was released, but you will also know which SP to move to on a new TL. When moving up to a new TL, you must move to a SP that is the same or later than your current SP. The SP number itself will not be the same, because the Service Packs will be numbered consecutively as they are released, but the dates will tell you where you need to be on the new TL.

New Release Strategy Service Pack Name Detail (AIX 5L V5.3 shown)



* Not showing all SP's above and example dates are not necessarily accurate

Figure 1: Service Strategy Service Pack Name Detail

The rule of thumb should be that when moving to a new TL, move to the latest SP, that way you are guaranteed it will install. Because, if you did apply any individual PTF's on after an SP, then `'oslevel -s'` would not report them. `'oslevel -g 5300-06-03-0736'` would show what filesets were greater than the specified service pack, but since not everyone would run that command, the safest thing to do is go to the latest SP, then no problems will occur at install time.

The `installp` command was changed, as were the updates themselves, to not allow a system to apply any updates that are 'younger' than what is currently installed. This would cause regression.

Each fileset update in a SP has the date marked (just like the SP) and the `installp` command has been changed to not allow an old SP/fileset on top of a newer SP/fileset, even if that SP is on an older TL. So, using the example above, if you are currently at

TL7 SP8 (5300-07-08-0845), then you would not be allowed to install **TL8 SP2 (5300-08-02-0830)**, because 0845 was released after 0830, and therefore will have fixes and hardware enablement that 0830 does not have.

The `oslevel` command will now print out the new SP format, but the other options will not change.

```
# oslevel
5300
# oslevel -r
5300-07
# oslevel -s
5300-07-02-0811
```

The `installp` command will also stop an update entirely if it sees any updates that are older (released before) in the list it is trying to apply. This is to make sure that part of a SP is not installed, if that was not your intention. If you see a message from `installp` about not being able to install a fileset update because of regression, then go to a newer SP (the latest) and try the install again.

Changing the M in VRMF

Starting with TL7, any filesets that are updated will get a new 'M' in the VRMF. For example, if the `bos.rte.lvm` fileset was updated, its update in TL7 would be 5.3.7.0 and the first update, in SP1, will be 5.3.7.1. The fileset updates won't necessarily correspond to the SP because an update for fileset `bos.rte.install` might not come out until SP3, but it would be called `bos.rte.install 5.3.7.1`. Likewise, if `bos.rte.lvm` had not changed since SP1, it would still be `bos.rte.lvm 5.3.7.1` in SP3.

Recommendation to apply the whole SP instead of just individual PTFs

Customers are encouraged to apply Service Packs as a unit, to simplify inventory and make it easier to report levels to service. Starting later this year, Fix Central and SUMA will download the entire SP for a specified APAR (search). This was also done to simplify the ordering process. The entire SP is downloaded, but individual fileset update or APARs can still be applied with SMIT or from the command line (`installp`, `instfix`). There is nothing in the Service Pack that glues all the updates in a Service Pack together.

Later in this paper, we will discuss some best practices maintenance recommendations for the frequency of applying SP's.

Service Pack schedules

Because we will be supporting more TL's in the field and because we want to line the SP's up to come out at the same time (with the same YYWW), then SP's release schedules will be increased to approximately every 8-12 weeks. Occasionally, if a critical problem is found (security, for example) and we cannot wait for the next SP to release the fix, a new service pack will be released that will only have one or maybe two changes different from the previous SP.

But, it will get a new SP number, as well as a new release date. Depending on where the problem occurred will depend on which TL's get a new SP.

As always, you should create backups (mksysbs) of your system before and after any update or upgrade. If backing up to media (CD, DVD or tape), a boot image will be created for you on that media. If you are using NIM, be sure to use the mksysb image as a source for creating your SPOT/boot image, since that will guarantee that your boot image will match your mksysb. The option to create a SPOT/boot image from the mksysb image has been available since version 5.3.

Interim Fixes for Security

Security interim fixes that are released, as an example, as a result of a CERT advisory, will still get additional regression testing on the latest 3 releases, meaning that if TL8 is the current Technology Level, then tested interim fixes will be released for TL8, TL7 and TL6. Testing will be done as time allows, meaning that in some cases an interim fix must be released before testing is complete (because of the vulnerability). In the case of an interim fix going out without additional testing, a new interim fix will be released soon thereafter which will have completed testing.

All currently supported levels will get an interim fix, if applicable. If four TL's are currently supported, then four interim fixes will be released if the problem does occur on all four levels.

APAR Numbers will be per TL

Currently, if a problem exists in 5.2 and 5.3, there is one APAR number for each release. Starting with TL7, a new APAR will be created for each TL per release. When updates were only supported on the current TL, only one APAR was required. But, now that multiple service streams exist, an APAR must be created for each one where a new fileset update will be shipped. This paper will be updated with more information about multiple APARs before TL7 is released.

Interim Fix Guidelines/Policy for Maintenance

We will no longer have CSP's or six months of interim fix support. Interim fixes will continue to be used for temporary fixes than can be used until your next maintenance window.

Here are the guidelines that the Service team will be following:

- If a client is at the latest level and finds a problem – they can get an Interim Fix
- If a client finds a problem that is already in a SP - they need to install the latest SP (or, at a minimum, an SP that includes their fix)
- If it is a critical problem and/or the client can't install a SP - an interim fix can be offered and support will recommend they move to the latest SP during their next maintenance window
- If a client finds a new, unique problem at any supported level (within the 24 month support window for a TL) - they can get an Interim Fix on their current level (if it's possible)
- If a client finds a new unique problem on a prior SP, has multiple Interim Fixes installed, which are included in later SP - they must move to the latest SP before getting another Interim Fix

- If a client has multiple Interim Fixes and only some of them are in a later SP - they must move to the latest SP and another Interim Fix will be bundled with their prior Interim Fixes on the current level

Hardware Support with a Service Pack

When new hardware is released, the required TL's or SP's will be published in the release notes and RFA (Release For Announce). If the TL is currently supported, then the latest SP will have the hardware support. The exception is the oldest TL (n-3) will not get hardware support because there will be no further SP's on that level.

If new boot media is required for an existing TL, then it will be made available for web download (ISO image) via the PRPQ process. This is an option for customers that do not have TL installed someone else in their environment.

If you currently have the TL in your environment, then updating to the required SP and creating a backup (mksysb) media or image (NIM) will allow boot and install of the new systems.

Moving to a New TL

You should move to a new TL:

- If your existing TL is out or is about to go out of service
- You want to use new function and/or features in a new TL. Hardware exploitation, such as large page space or new software function, such as multibos, will only be released in a TL.
- You are going to test a new level and want to get the longest support possible. In this case, you should move to the latest TL.

Moving to a New SP

If you are currently running on a supported TL, then any SP will be supported, but the risk in staying at an older SP is being asked to move up to a newer SP because it contains an update that you need.

Updating twice a year to a new SP or TL is recommended to stay current.

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 5L Release and Service Strategy, and best practices for managing the AIX 5L OS and System p™ servers.

Summary

The new service strategy will offer customers more options for maintenance in their environment. Two years of support per TL will help simply and reduce cost for maintenance. Supporting new hardware on existing TL's will reduce complexity in customer environments.

AIX Service Strategy Details and Best Practices



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