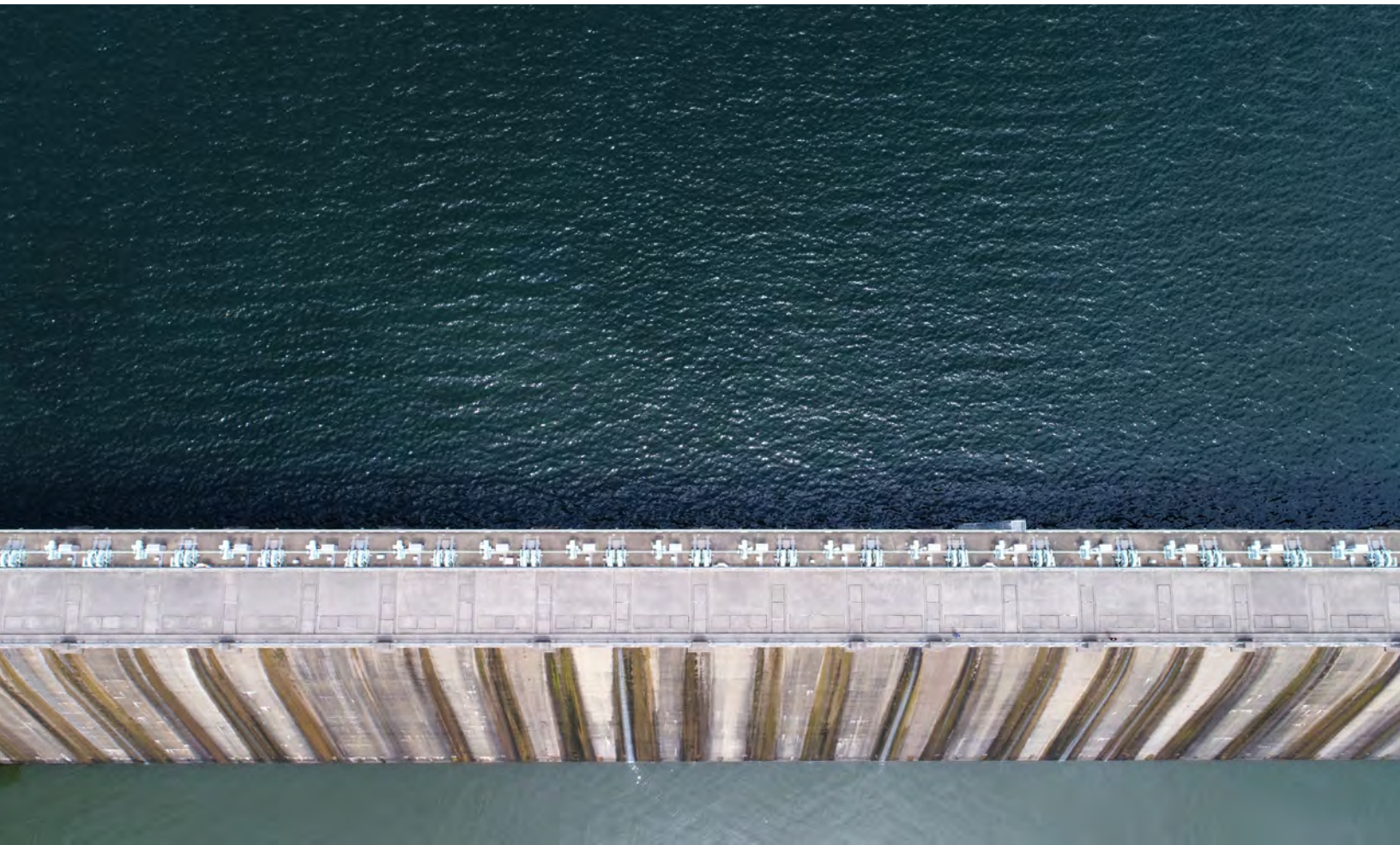


# IBM Power Systems service strategy and best practices

## Summary

The purpose of this document is to provide guidance for your IBM Power Systems to ensure high reliability and availability, especially during this unprecedented global challenge. Together, our teams and Power ecosystem are available to provide uninterrupted services through routine maintenance and emergency onsite visit requests. Learn more now.



# Concepts

## VIOS release

VIOS releases (TL's) contain product enhancements, new feature /function, new hardware support and fixes. VIOS releases are typically released once per year. A VIOS release is reflected by an increase to the version, release, and/or maintenance level number(s).

## VIOS lifecycle

VIOS follows the standard IBM software lifecycle which provides three years of standard support per release. Extended support may be at an additional cost. The VIOS service stream has four delivery vehicles: Fixpacks, Servicepacks, Minipacks(New), and Interim Fixes.

### Fixpack

A fixpack (FP) updates the VIOS software to the latest level. It contains new feature /function, product enhancements, new hardware enablement, and fixes. It is used to upgrade an existing VIOS to a new VIOS release level while preserving existing customized information. Applying a fixpack to a VIOS will update one or all of the VIOS's version, release, or maintenance level.

### Servicepack (SP)

Servicepacks contain fixes and new hardware enablement (Power servers and I/O). Servicepacks do not typically introduce new feature function.

### Minipack (MP)

A minipack is a supplement to a servicepack. Minipacks are intended for specific enablement (ie. HW, other solutions). While it is generally recommended to apply SP's for general fixes, MP's are recommended in cases where enablement of a specific solution is needed, otherwise they are optional.

### Interim fix

An interim fix (iFix) applies to a specific VIOS servicepack (ie. fix level) and provides a fix for a specific issue. The official fixes are typically bundled in the next VIOS servicepacks and /or fixpacks.

## VIOS problem resolution

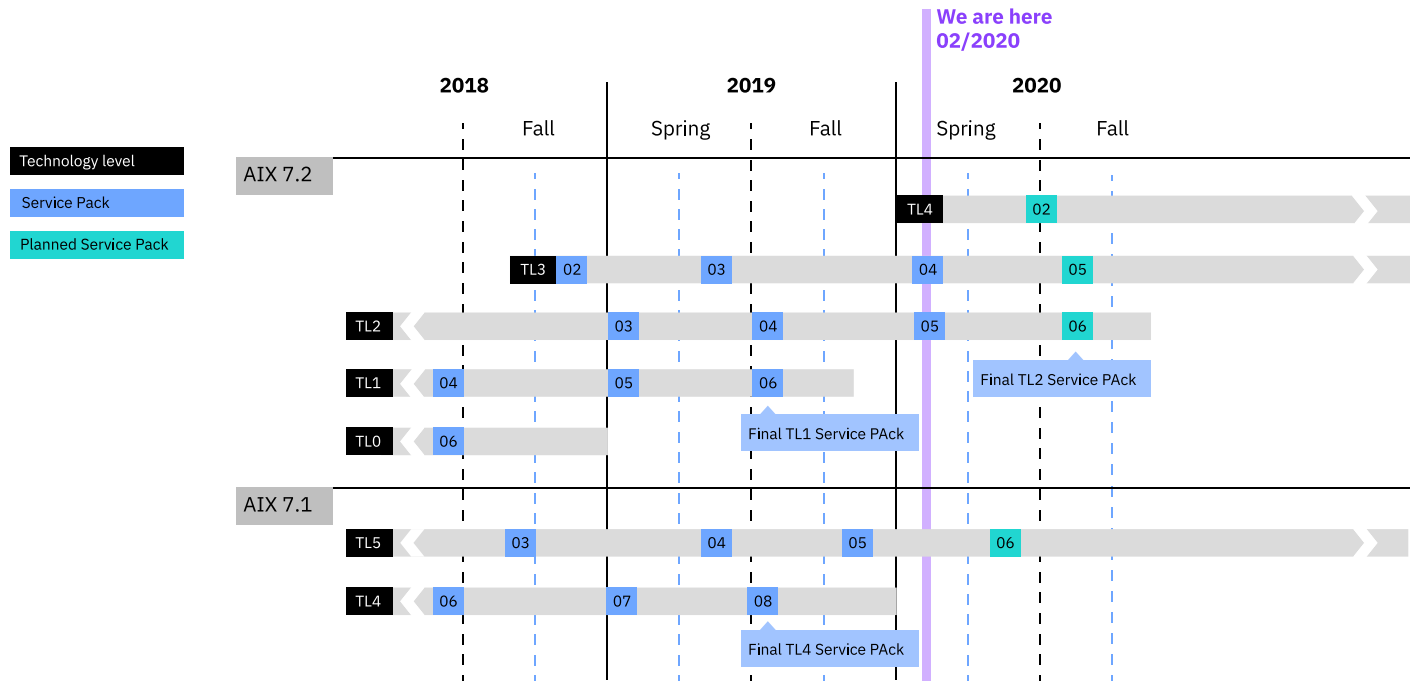
To ensure the reliability, availability, and serviceability of a computing environment using the Virtual I/O Server, IBM recommends that Virtual I/O Servers are maintained to the recommended fix level for that particular release. That level contains all cumulative fixes for the specified VIOS release. Please refer to FLRT for recommended VIOS levels:

[ibm.com/webapp/set2/flrt/liteTable?prodKey=vios](http://ibm.com/webapp/set2/flrt/liteTable?prodKey=vios)

Service pack fix delivery is provided for the VIOS releases that are still under standard support. This is typically the current (designated as n) and the VIOS Release preceding the latest release (n-1).

## AIX lifecycle

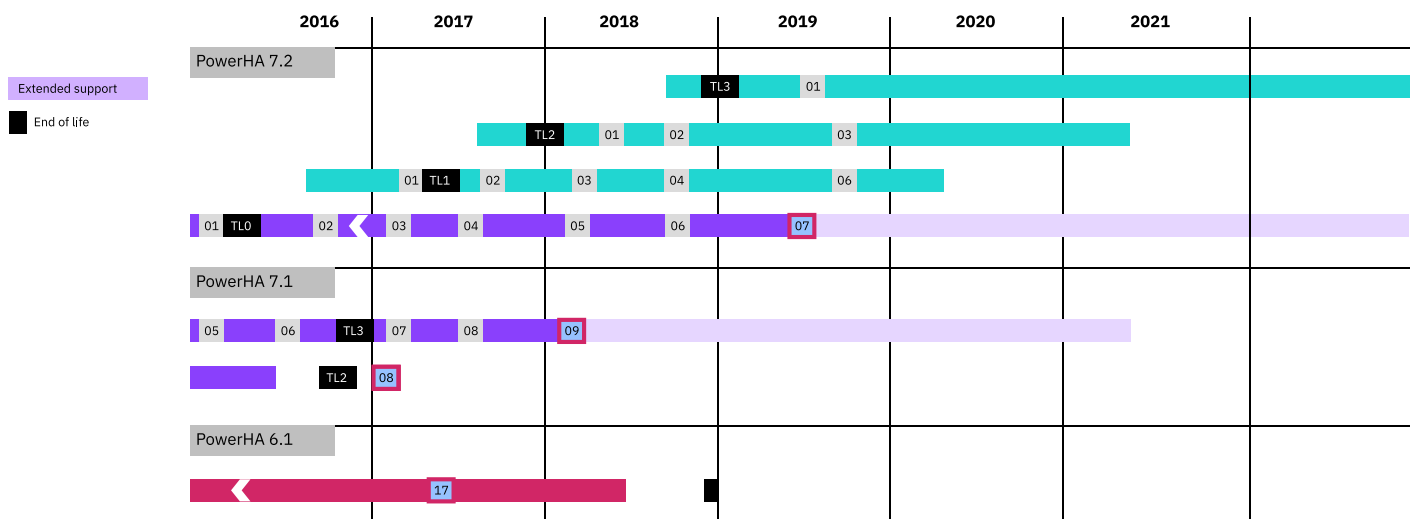
AIX supports multiple Releases and multiple Technology Levels on each Release in parallel to give customers flexibility when selecting what levels to run. Here is a current example of AIX Lifecycle and supported releases:



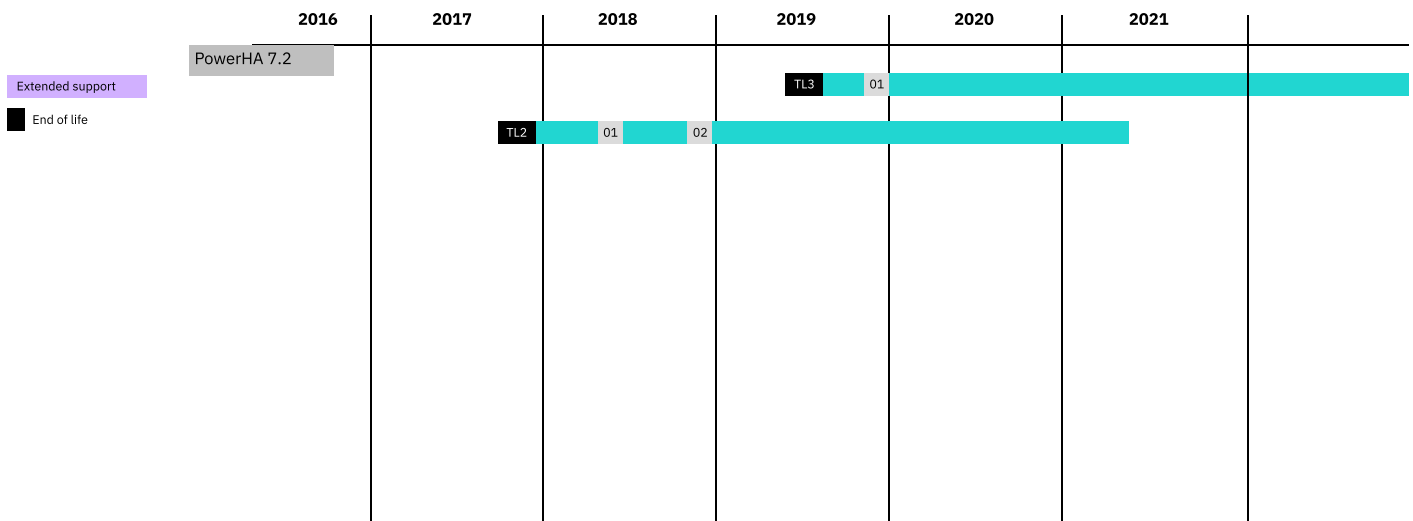
## PowerHA lifecycle

Here is a current example of PowerHA Lifecycle and supported releases:

### PowerHA SystemMirror for AIX Lifecycle

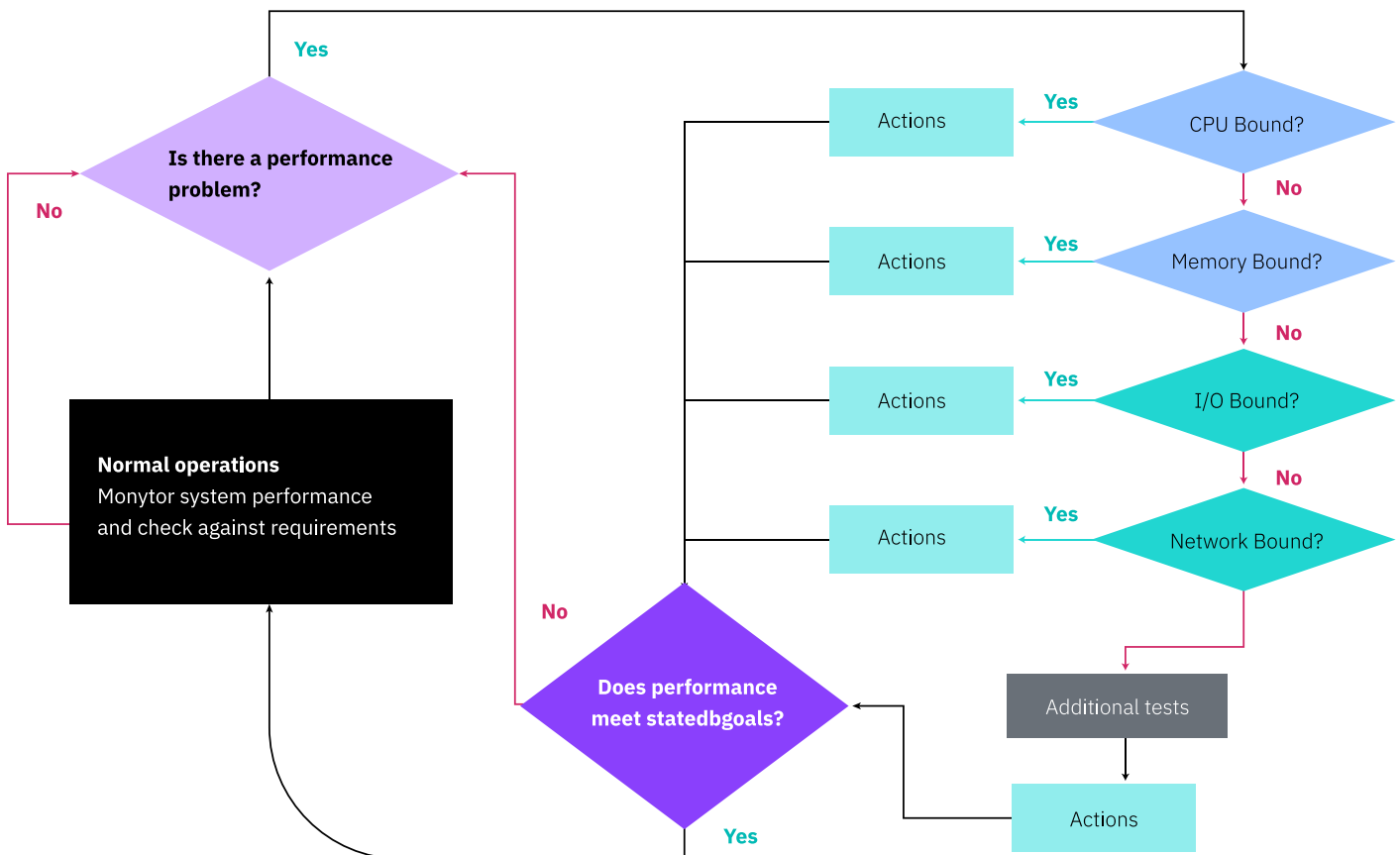


# PowerHA SystemMirror for Linux Lifecycle



## VIOS, AIX and Linux performance analysis

Refer to the following chart when conducting performance analysis. For PowerVM based virtualized environment, always start with VIOS.



# Performance analysis

## PowerHA cluster verification

The following provides generic guidelines for a quick PowerHA check:

### Validating the cluster definition:

Check the PowerHA SystemMirror topology  
– Use `cltopinfo`

Check the PowerHA SystemMirror resources  
– Use `clshowres`  
– Use `clmgr`

Check the Cluster Aware AIX (CAA) cluster  
– Use `lscluster`

### Keep an eye on the log files in `/var/hacmp/clverify`

It has the results of the default daily cluster configuration validation

### In case something went wrong, logging can be used to do the troubleshooting

Start with `/var/hacmp/adm/cluster.log` for a high-level view of the cluster activity. Check the activity timing.

Then use time in previous step to locate details in `/var/hacmp/log/hacmp.out`

## PowerHA systemmirror cluster

Build and implement a test plan that will:

- Start cluster services
- Stop cluster services
- Move application resources to another node by stopping cluster services
- Return a moved application's resources from takeover node to its home node
- Verify that the loss of access to storage is handled:
  - a. Loss of `rootvg` on a node causes the application's resources to move to another node
  - b. Loss of a protected `datavg` on a node causes selective failover to another node
- Verify that the loss of network access causes movement of application IP addresses to remain available if possible

### Remember

1. Ensure that all stakeholders are involved, including network, storage, database and management
  - Document expectations and feedback (specially on failure)
2. Backup cluster configuration



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