Installation and Maintenance Best Practices

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Agenda
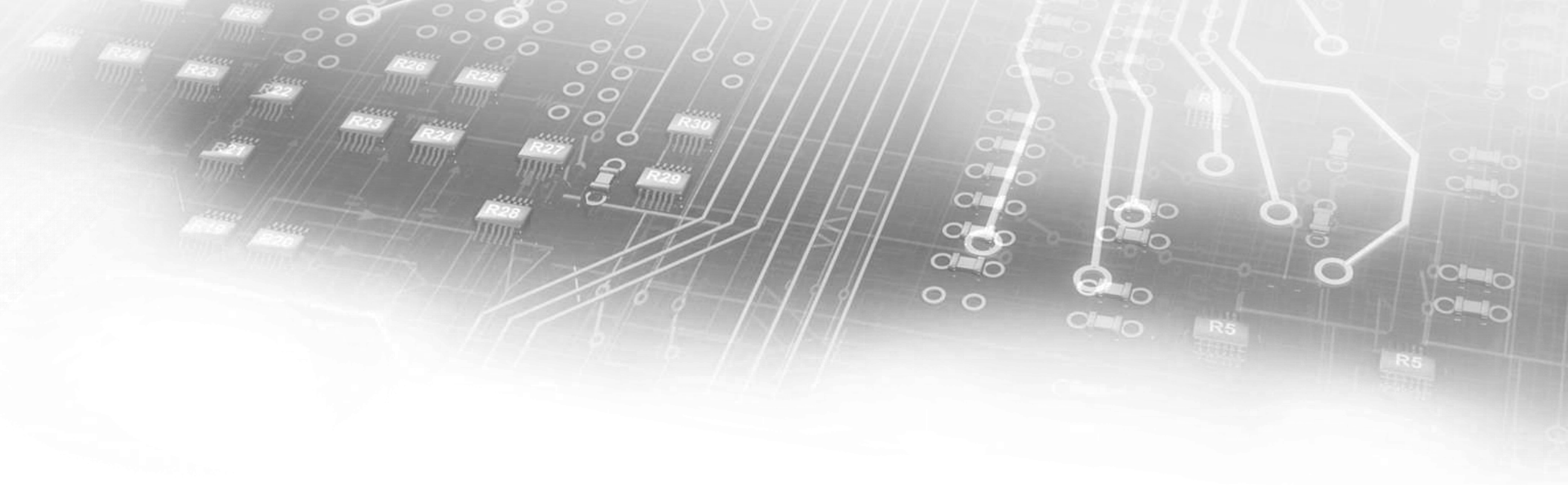
Type of Maintenance: Corrective, Preventative, and Compatibility

Acquiring Maintenance

Using ERROR and FIXCAT HOLDDATA

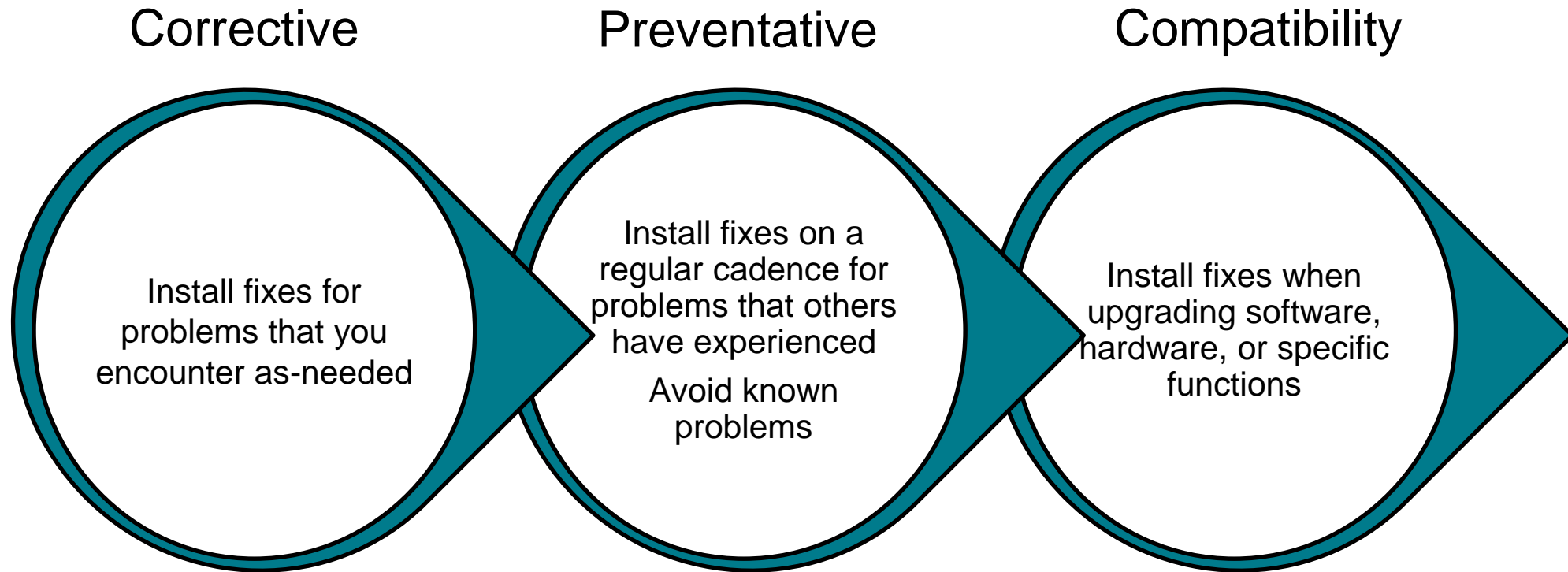Finding Compatibility Information

Notifications

Future Installation using z/OSMF

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Corrective Versus Preventive

Type of Maintenance

Corrective

Install fixes for problems that you encounter as-needed

Preventative

Install fixes on a regular cadence for problems that others have experienced

Avoid known problems

Compatibility

Install fixes when upgrading software, hardware, or specific functions

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Installing Preventive Maintenance

Best Practice

- Develop and implement a proactive preventive maintenance strategy

- Regularly apply Preventive Maintenance using CA Recommended Service (CA RS)

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# Installing Preventive Maintenance

What is CA RS?

- Patterned after the IBM Recommended Service Upgrade (RSU)

- PTFs are tested in an integrated system test (IST) environment

- CA RS is released on the **3rd Business day of every month**
  - Automated testing of products in a single environment
  - Tested for a minimum of a month before is it recommended

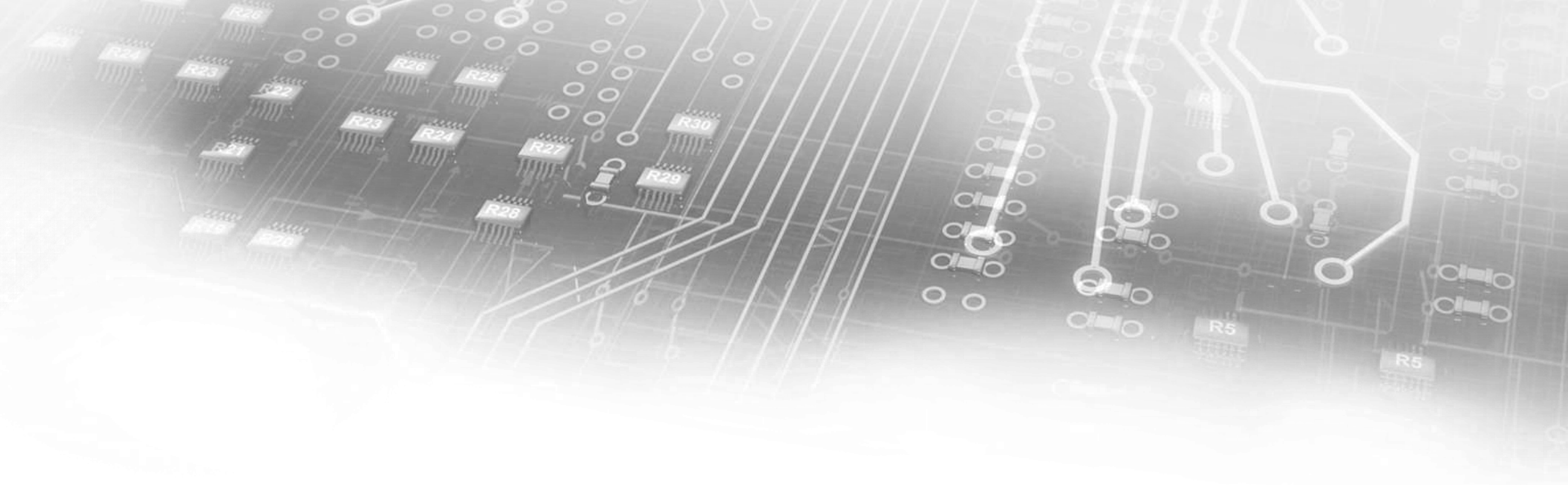 **Broadcom Standard Technology**

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Why Install Preventive Maintenance?

- Minimizes outages by keeping your product maintenance current

- Reduces the chance of encountering a PTF in Error or HIPER, resulting in a stable environment

  – Use of HOLDDATA to identify PTFs in ERROR

  – Use of SOURCEIDs for easy installation and reporting ++ASSIGN SOURCEID(CAR1908) TO (SO01234)

Preventive Maintenance Best Practices
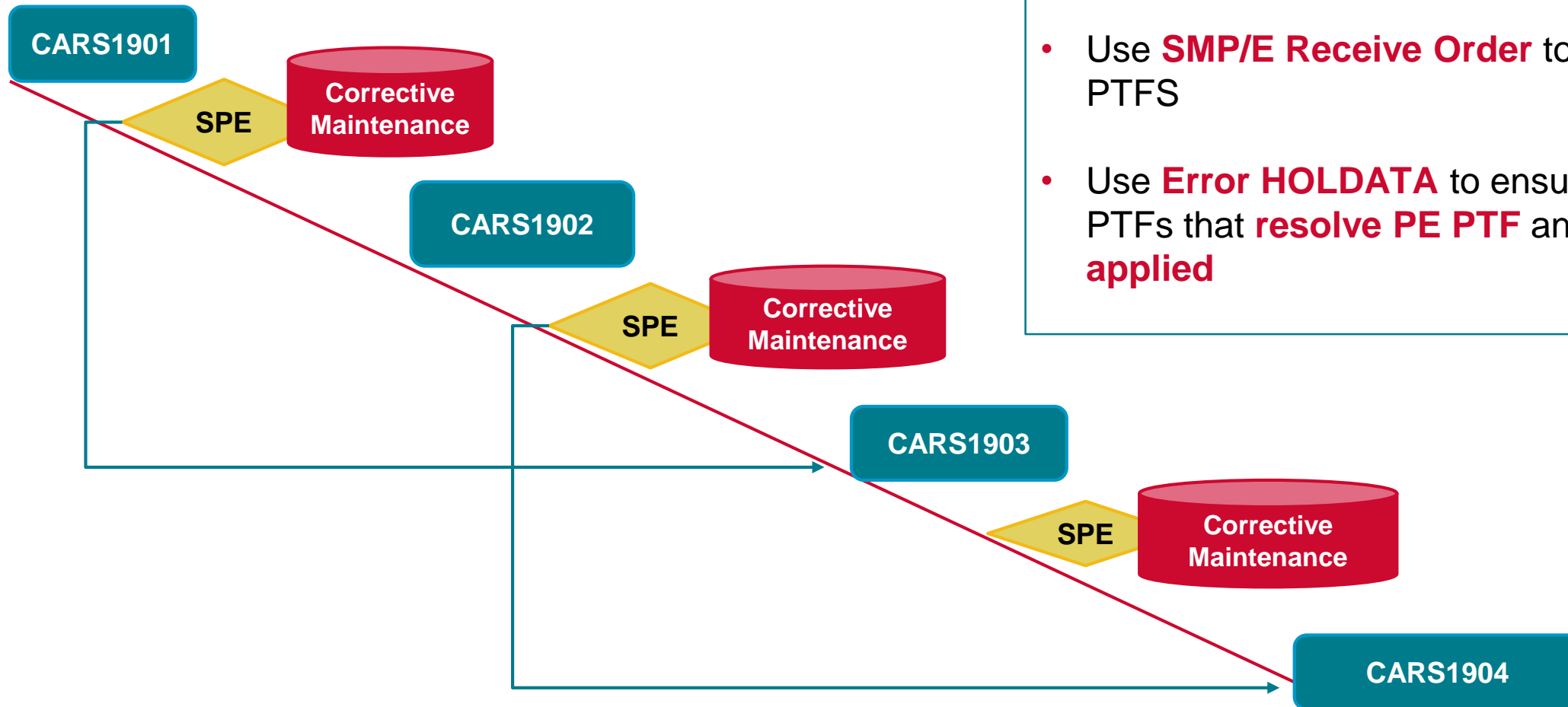
- Install **CA Recommended Service (CARS)** on a regular cadence.

- Use **SMP/E Receive Order** to acquire all PTFS

- Use **Error HOLDATA** to ensure you have PTFs that **resolve PE PTF** and **HIPERS applied**

CARS1901

SPE

Corrective Maintenance

CARS1902

SPE

Corrective Maintenance

CARS1903

SPE

Corrective Maintenance

CARS1904

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Acquiring Maintenance

SMP/E Receive Order

Best Practice

- Use **SMP/E Receive Order**

- Broadcom, IBM and Compuware support Receive order

- SMP/E Receive command:
  - Builds custom package of missing PTFS
  - Downloads PTFs to your SMPNTS USS directory
  - Receives PTFs into Global Zone

- Package includes ++HOLDDATA and ++ASSIGN statements

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Benefits of Using Receive Order

- Order PTFs, APARs, Critical, Recommended, ALL or just HOLDDATA

- Use Job scheduler to automate acquisition on a regular cadence

- Fast Delivery of your PTFS

- One time security and network setup
  - Download certificates and create keyring
  - Update your network DNS to ensure access to vendor servers

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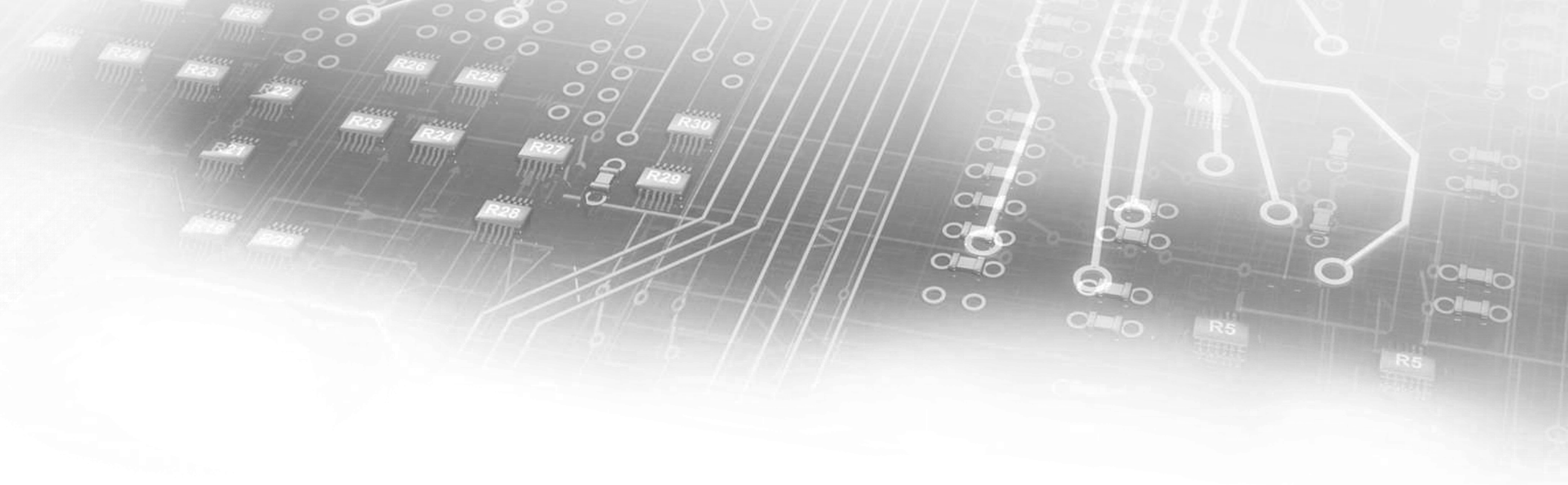
Acquiring Maintenance

Apply Maintenance using SOURCEIDs

Receive and APPLY Maintenance

SET BOUNDARY(*YOUR TARGET ZONE*).

APPLY CHECK SOURCEID(**CARyymm**)

GROUPEXTEND BYPASS(HOLDSYSTEM).

SOURCEID	Description
PRP	PTF resolve a PTF in error
HIPER	PTF resolves a High Impact or pervasive problem
SPE	PTF contains a small programming enhancement
CAPyymm	PTF is preventive maintenance where yymm is the year and month it was published.
CARyymm	PTF is associated with a CARS level

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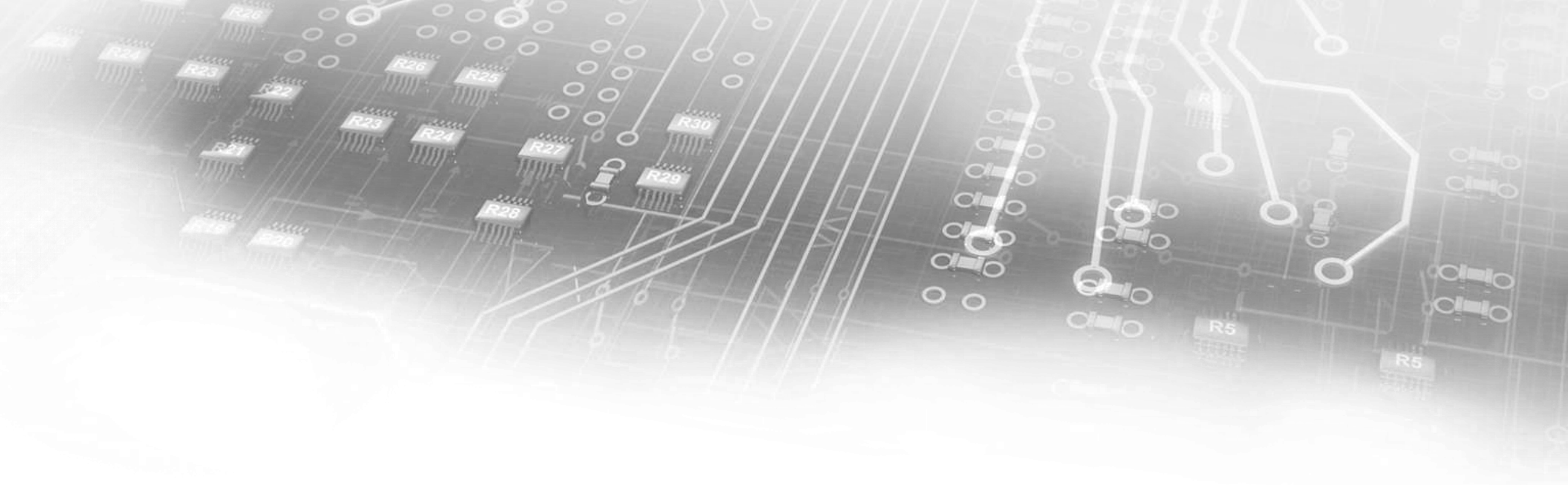
Using Error HOLDDATA

Using ERROR HOLDDATA

- HIPERs and PTFs in Error are identified using Enhanced HOLDDATA
- ERROR HOLDDATA prevents PTFS in error from being applied without fixing PTF

Best Practice

Download HOLDDATA on a regular cadence and execute ERRSYSMOD.

PTF in ERROR

```
++HOLD(SO07734) ERROR FMID(CCLXC30)
 REASON(AS07734) DATE(19080)
 COMMENT(
     PROBLEM OPSMVS-1550:  POSSIBLE S0C1 RUNNING OPSMVS
 SMRTDATA(CHGDT(190321)    FIX(SO07758)
  SYMP(DAL)
       )).
```

PTF that resolves PTF in Error
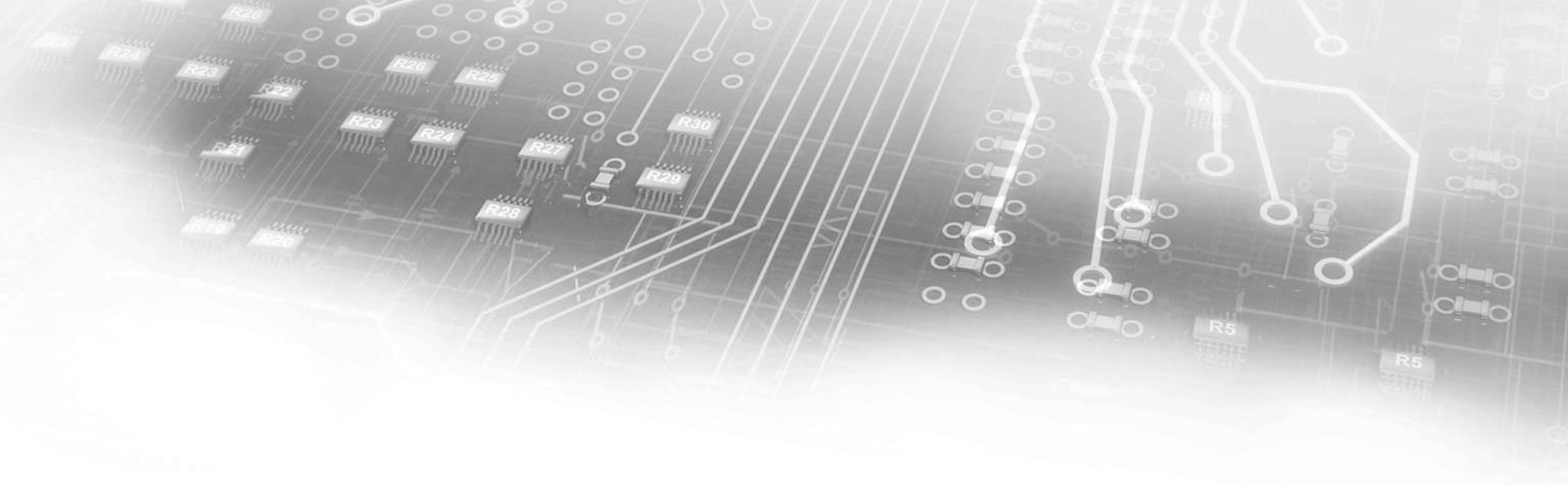
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Generating ERRSYSMOD Report

- After all HOLDDATA has been received, execute REPORT ERRSYSMODS

  - Contains a list of SYSMODS affected by unresolved error holds

- **SMP/E commands to execute ERRSYSMOD**
  ```
  SET BOUNDARY (GLOBAL).
  REPORT ERRSYSMODS ZONES(CAIT0).
  ```

- Include SMPPUNCH DD which will contain the commands for installing SYSMODS that resolve the error hold reason IDS

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Reviewing ERRSYSMOD Report

- Use the Exception Report to find any missing HIPERS or Resolving PE PTFs

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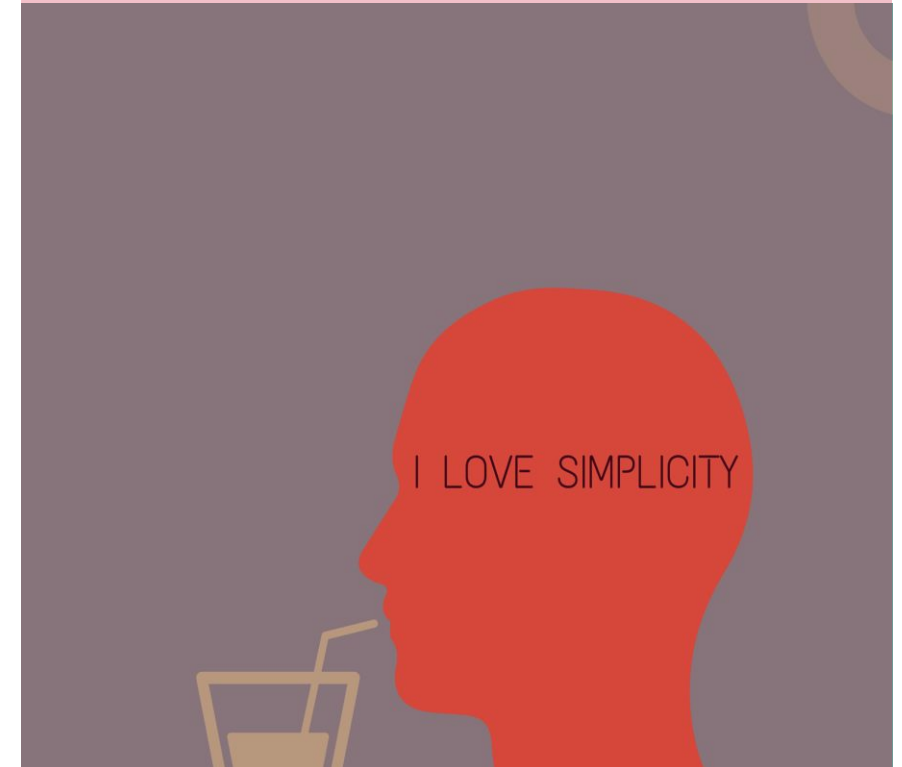
Using FIXCAT HOLDDATA

FIXCAT HOLDDATA

Simplifies the installation tasks for required maintenance for new hardware, software or functions.

With FIXCAT

➢ RECEIVE all available PTFs and FIXCAT HOLDDATA

➢ APPLY maintenance using PTF categories

➢ Just prior to upgrade, RECEIVE all available PTFs and HOLDATA. Use SMP/E to find missing PTFS.

I LOVE SIMPLICITY

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FIXCAT – Finding PTFs to APPLY

- After all HOLDDATA has been received, execute REPORT MISSINGFIX

  - Identifies PTFs for fix categories that are missing

- SMP/E commands:
  ```
  SET BOUNDARY (GLOBAL) .
  REPORT MISSINGFIX ZONES(CAIT0)
  FIXCAT(CA.TargetSystem.RequiredService.z/OS.V2R4) NOPUNCH .
  ```

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Missing FIXCAT Sysmod Report

- Two PTFs required for z/OS V2R4 – One received and one missing

```
MISSING FIXCAT SYSMOD REPORT FOR ZONE CAIT0


                                HOLD      MISSING   HELD            RESOLVING SYSMOD
FIX CATEGORY            FMID    CLASS     APAR      SYSMOD    NAME      STATUS    RECEIVED


CA.TargetSystem-RequiredService.z/OS.V2R4
                        CCLXD00           ST09495   CCLXD00   SO09495   GOOD      NO
                                          TR11111   CCLXD00   SO11111   GOOD      YES
```

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Apply FIXCAT PTFs

- Apply Required PTFS:
  ```
  SET BOUNDARY(CAIT0) .
  APPLY SOURCEID(CA.TargetSystem.RequiredService.z/OS.V2R4)
    GROUPEXTEND .
  ```

- SMP/E will apply all PTFs that have a SOURCEID of CA.TargetSystem.RequiredService.z/OS.V2R4.

- Wildcarding can be used to apply PTFs for multiple Fix Categories.

    Example: CA.*.z/OS*

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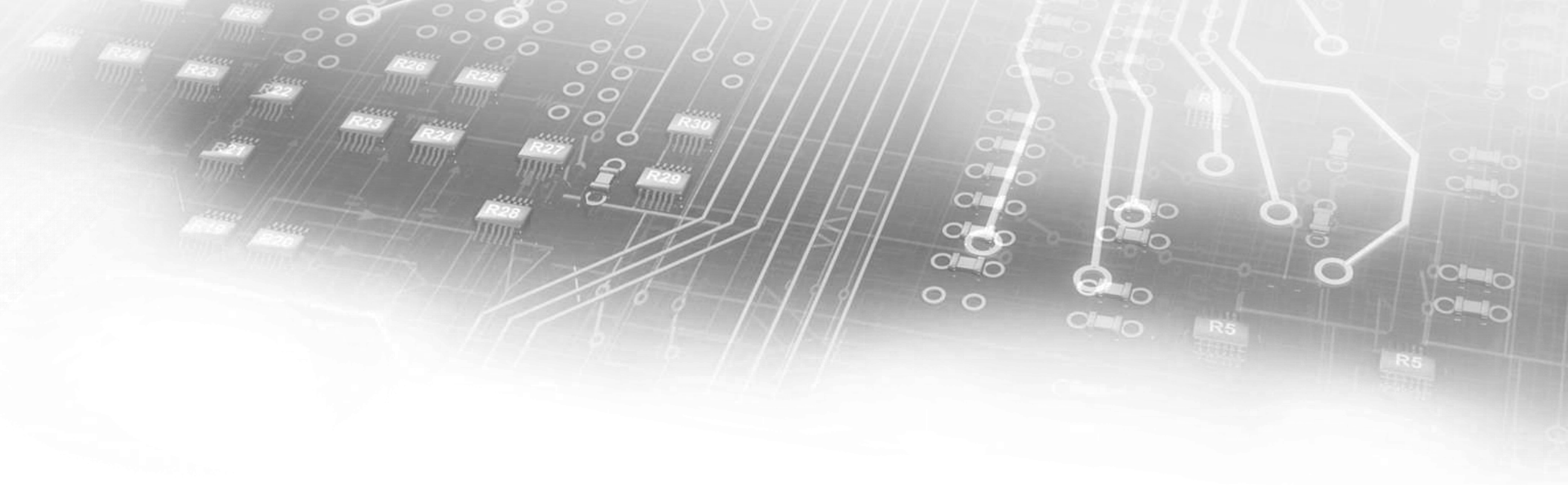
Other Best Practices

Finding Product Compatibilities

- One [landing page](#) for all Mainframe Compatibilities

- Single page for each major Compatibility including z/OS, CICS, DB2, IMS, zEnterprise Hardware, Pervasive Encryption and PCI DSS

- Access Product specific pages by clicking on product name on any major compatibility page

z/OS Compatibility Matrix

Use this grid to identify which CA product release are compatible with IBM releases. If maintenance is required:

- A PTF section link appears under compatibility status.
- Use FIXCAT HOLDDATA to aid in identifying maintenance required to support a particular hardware device, software, or function.
- If found, click on the additional information link that appears under the compatibility status.

Launch Mainframe Compatibility Main Page

The following grid contains a list of all CA Mainframe Products and releases. The columns values include:

TBD	CA is in the process of verifying that the product is compatible
NO	The product is not compatible.
YES	The product has been certified and is compatible.
N/A	The compatibility is not applicable to the CA product.

Search By Product Name

Filter | Type product name here...

NEW: To view all compatibility information for a specific product, click on the product name in the grid below.

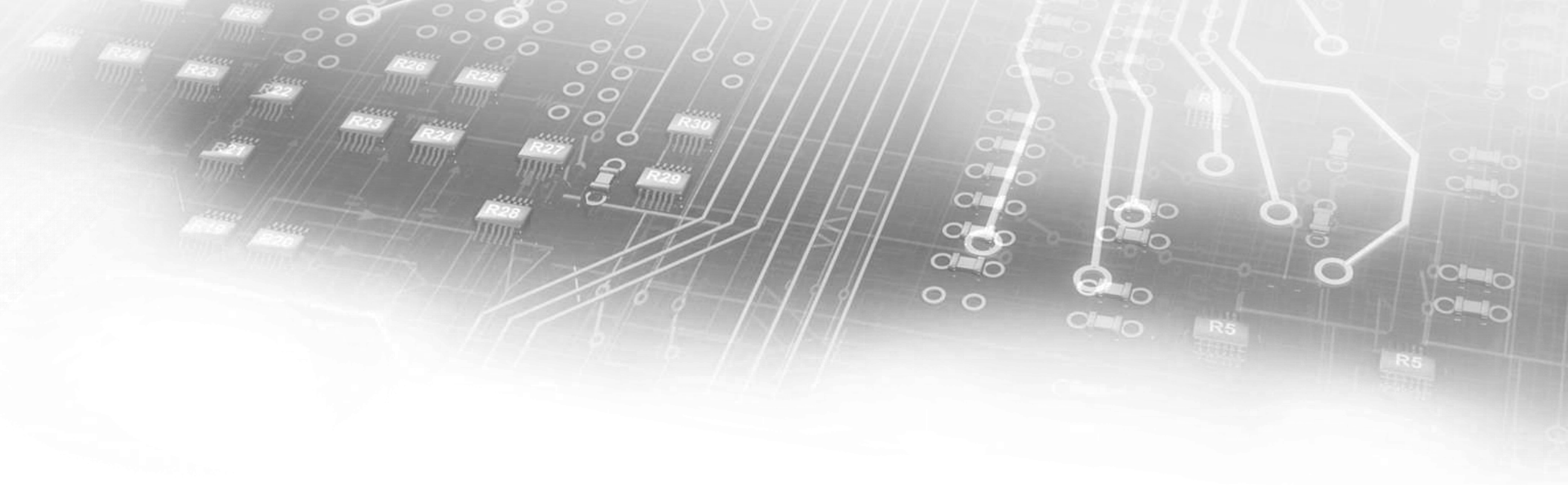| Product/Release	z/OS V2R4	z/OS V2R3	z/OS V2R2	z/OS V2R1
CA ACF2 16.0	YES	YES	YES	YES
Product Status		PTFs	PTFs	PTFs
Maintenance Grid				
CA ACF2 Option for DB2 1.3	YES	YES	YES	YES
Product Status				
Maintenance Grid				

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Subscribe to Product Notifications

- Subscribe to notification from support.Broadcom.com

- Register for Critical Alerts advisory or Product Updates

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Join a Mainframe Communities

- Join the Mainframe Communities
  - Find Upcoming Events and Webcast
  - Find Latest Blog Posts
  - Benefits from learning, connecting and sharing knowledge

- Go to https://community.broadcom.com/mainframesoftware/home

- Select the mainframe Product Communities

- Select Join Community and set up email notification

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Best Practices Summary

Maintenance Best Practices Checklist

- ✓ Define a Preventive Maintenance schedule using CA Recommended service 2 to 4 times a year

- ✓ Execute ACCEPT CHECK and ACCEPT prior to APPLYING a new CA RS level or any maintenance

- ✓ Use SMP/E Receive Order to acquire all maintenance. IF you are not using Receive Order download PTFs, ++ASSIGN statement and HOLDDATA into Global zone
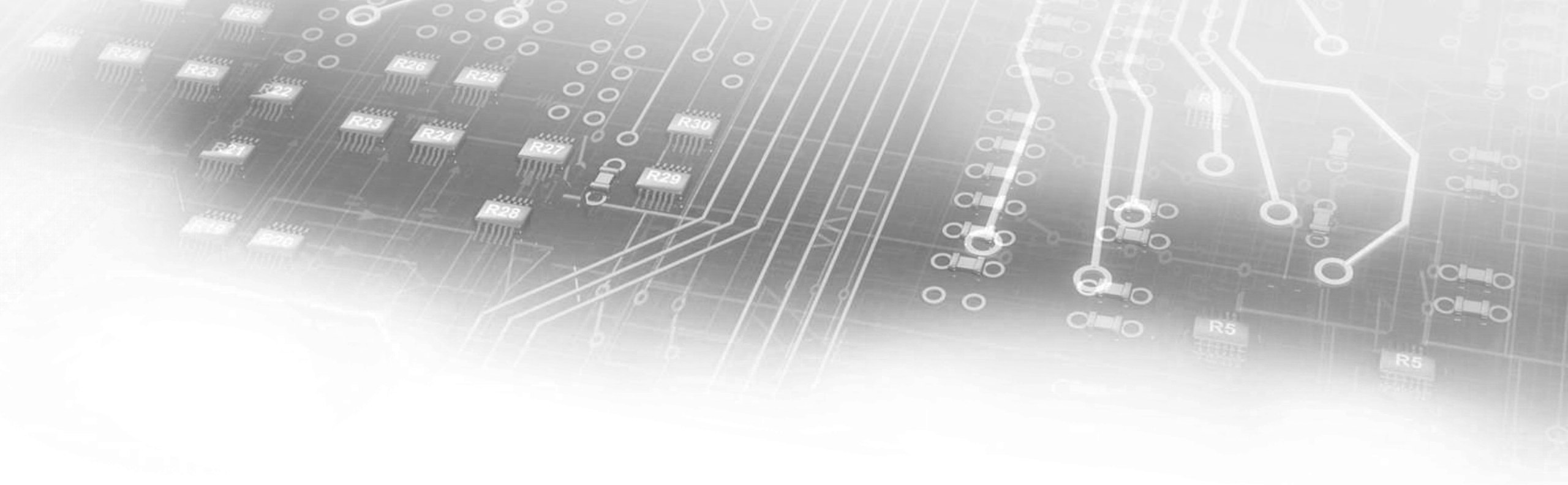
- ✓ Download latest HOLDATA and review ERRSYSMODs report regularly. Install missing HIPERS and PTFs resolving PE PTFs

- ✓ Execute APPLY CHECK to ensure all PE PTFS are resolved.

- ✓ Execute APPLY after all PE PTFS are resolved

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Future Installation using z/OSMF

Future Installation using z/OSMF

Problems with Current Installation of z/OS Products
- Different vendors tools for installing and configuring z/OS products
- Each Vendor has different standards for packaging
- Multiple tools have been developed by vendors to install products.

Goal is to provide one way to install, deploy, configure and maintain **all z/OS Software** which will support SMP/E and non-SMP/E installations.

Broadcom and other major ISVs are participating in this effort.

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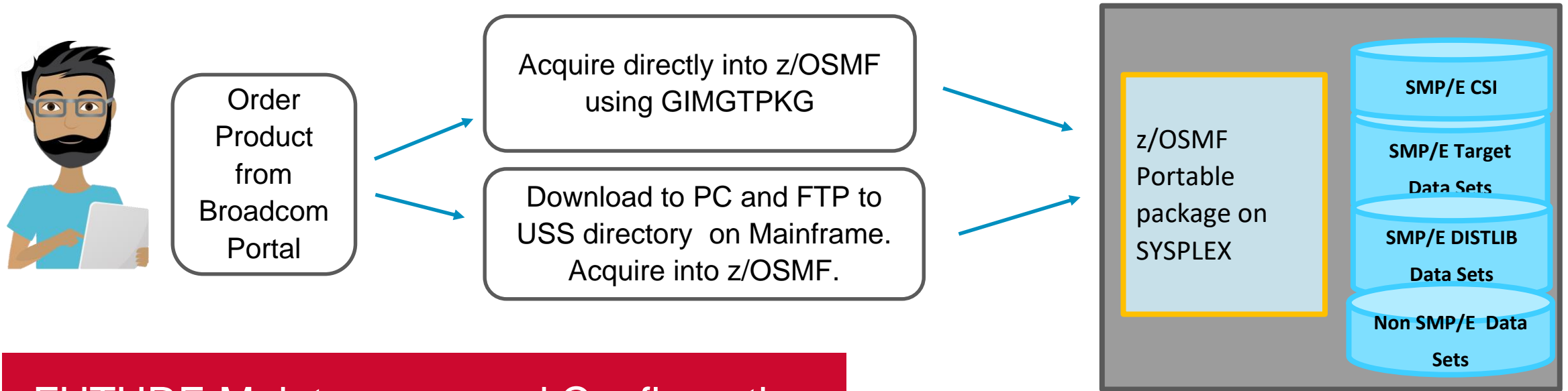**BROADCOM**®

Future Installation Persona

New installation strategy is aimed towards the next generation Mainframe System Programmers

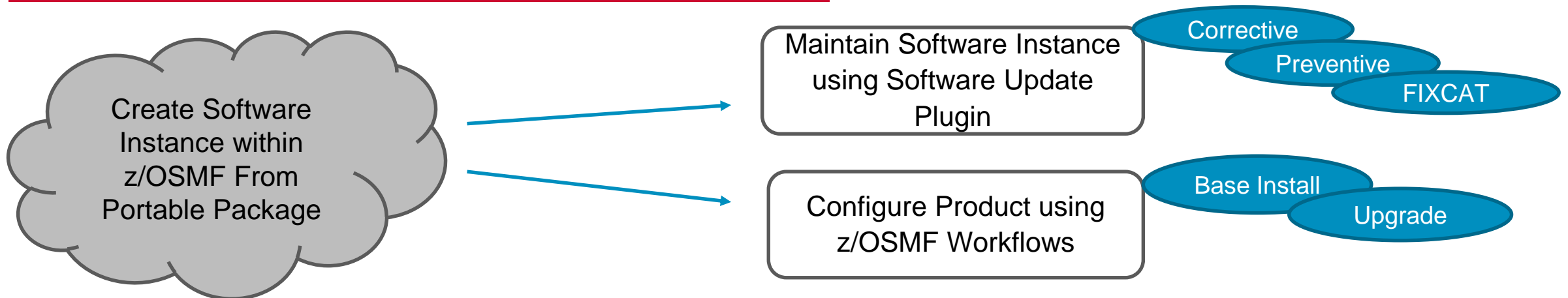## z/OSMF Persona for Installation (Tyler)

- New system programmer who is comfortable with modern tools (GUI, Rest APIs, CLI).

- Installs and maintains z/OS products with help from experienced SYSPROG.

- Experienced SYSPROG persona is getting closer to retirement.   Not interested in using modern GUI product.

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FUTURE Acquisition

Order Product from Broadcom Portal

Acquire directly into z/OSMF using GIMGTPKG

Download to PC and FTP to USS directory on Mainframe. Acquire into z/OSMF.

z/OSMF Portable package on SYSPLEX

SMP/E CSI

SMP/E Target Data Sets

SMP/E DISTLIB Data Sets

Non SMP/E Data Sets

FUTURE Maintenance and Configuration

Create Software Instance within z/OSMF From Portable Package

Maintain Software Instance using Software Update Plugin

Corrective

Preventive

FIXCAT

Configure Product using z/OSMF Workflows

Base Install

Upgrade

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z/OSMF Workflows

- New common way of configuring products
- Wizard driven experience with full control in UI

- APF authorization
- Adding to LINKLIST
- SAF setup
- STC Proc customization

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Documentation

CA Mainframe Installation and Maintenance Tools

https://techdocs.broadcom.com/us/product-content/recommended-reading/product-related-technical-information/ca-mainframe-installation-and-maintenance-tools.html?r=2

Configure CA SMP/E Receive Order

https://techdocs.broadcom.com/content/broadcom/techdocs/us/en/ca-mainframe-software/traditional-management/mainframe-common-maintenance-procedures/1-0/configure-ca-smp-e-internet-service-retrieval.html

List of FIX Categories

https://techdocs.broadcom.com/us/product-content/recommended-reading/product-related-technical-information/fixcat-holds-for-ca-products.html

Download Error HOLDDATA

https://techdocs.broadcom.com/us/product-content/recommended-reading/technical-document-index/downloading-holddata-and-assign-statements.html

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Thank You