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# CA Gen: Upgrade – Insights, Tips & Tricks

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# Agenda

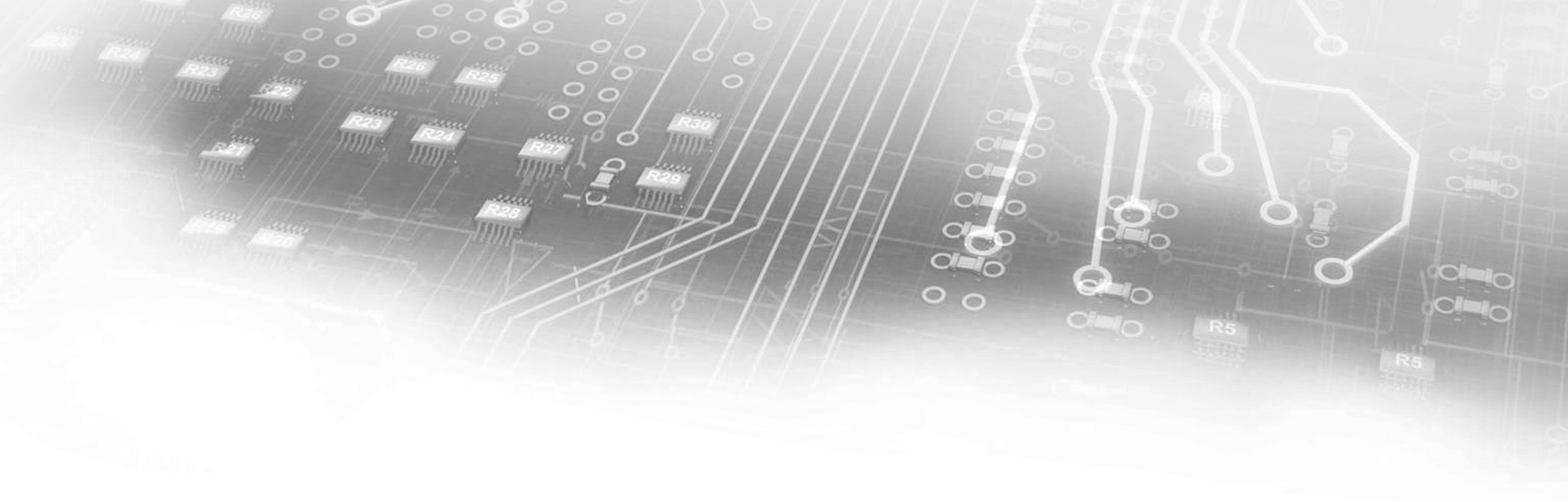
- Why Should We Upgrade?
- Fail to Plan. Plan to Fail.
- The Upgrade Process
- References
- Q & A

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# Why Should We Upgrade?



# Operate Critical Systems on a Supported Software Stack

- CA Gen 8.5/8.6 are the only supported releases
- CA Support unable to assist if on an unsupported release
- Extended Support may be available

# Enable Pending Infrastructure Upgrade Activities

- Unsupported versions of CA Gen are not re-certified for newer releases of third party products
- CA Gen upgrade can be an enabler for infrastructure upgrades (e.g. z/OS and CICS)
- 3rd Party product certifications on z/OS
  - DB2 v9\*, 10, 11 and 12
  - z/OS v1.13, v2.1, v2.2 and v2.3
  - CICS TS v4.1, v4.2, v5.1, V5.2, v5.3, v5.4 and v5.5
  - IMS v12, v13, v14 and v15
  - COBOL v4.2, v5.1, v5.2, v6.1 and v6.2
- See [DocOps](#) for Distributed 3rd Party product certifications

\* CA Gen 8.5 only

# COBOL 4.2 End of Support

- COBOL 4.2 EOS – 30-Sep-2021
- COBOL 6.x is compatible with COBOL 4.2 but....
- Many customers have a large amount of COBOL II or earlier compiled objects in their application runtimes as a result of previous *MVP upgrades*.

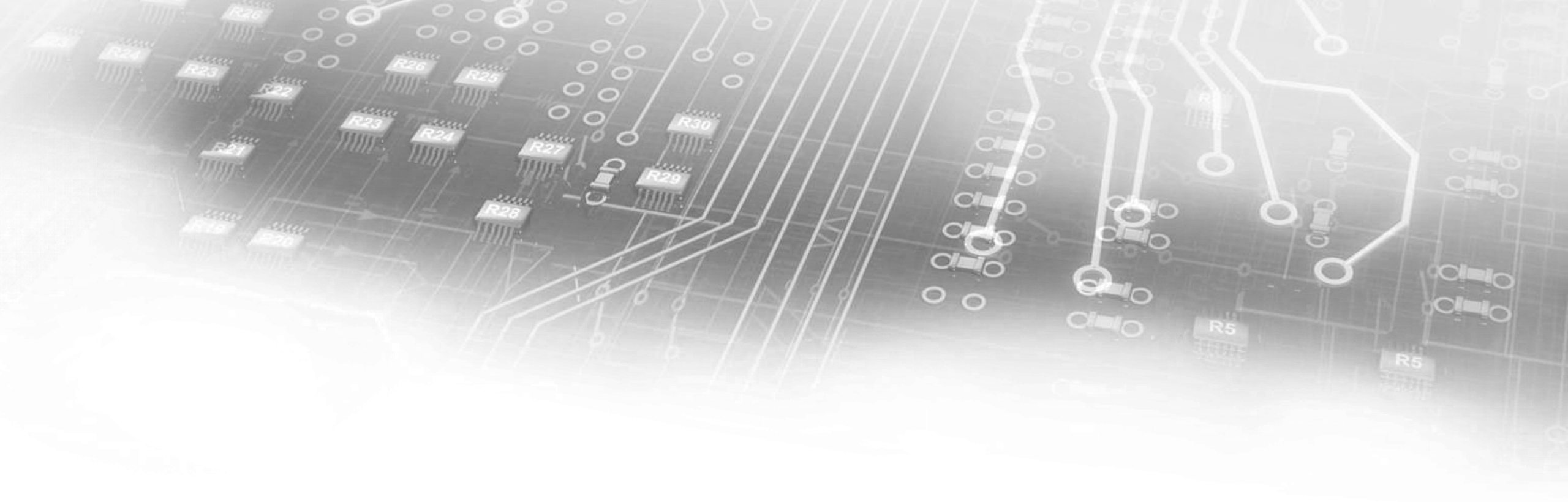
# Deliver Performance Improvements and Runtime Savings

- Migrating to COBOL 6.2 will deliver performance improvements over COBOL 4.2 - CPU reduction of 10-20% for batch applications



# Utilize New CA Gen Functionality and Capability

- Version free runtime libraries for distributed platforms
- z/OS COBOL runtimes compiled in COBOL 5
- Support for DB2 Universal Call Attach (DSNULI)
- Secure Connection between CICS Service and Distributed Clients and Proxies
- Web Service consumption in Java and C#

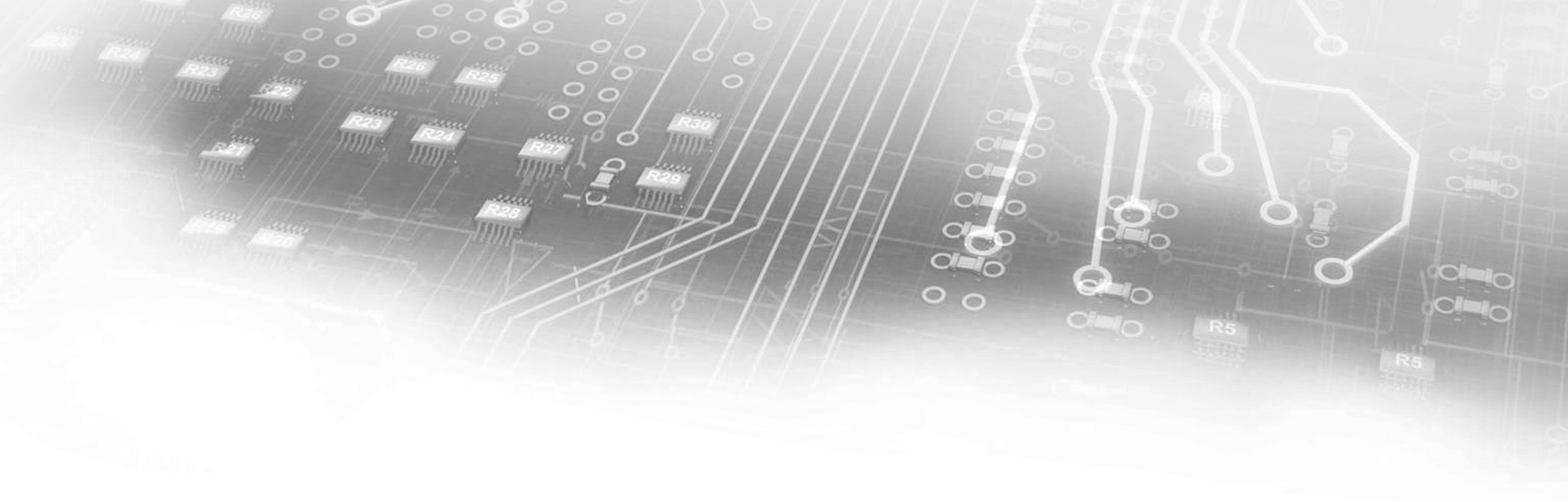


# Fail to Plan. Plan to Fail.



# Assess

- Assess Technical dependencies – current and required
  - Infrastructure software
  - CA Gen software and 3rd party tools**Understand changes required for dependent software**
- Identify application incompatibilities between current and target versions  
**Define application remediation points**
- Assess application source integrity (configuration management)
  - Check the CA Gen model source against the Production runtimes**Understand if application source is missing or not aligned with Production**
- Understand existing release processes and planned deployments
  - Deployment and cutover methods and constraints
  - Model and change management processes**Define the model management, deployment and contingency options**



# The Upgrade Process



# Plan

- Use of CSM or SAMPJCL and who will install
- Upgrade Path
- Upgrade In-Place or create new Encyclopedia?
  - Install Differences
- Incorporate custom changes
- Upgrade Plan to Build and Test

# CSM or SAMPJCL

- CSM is a recommended Broadcom interactive process to install z/OS products and maintenance using SMP/E (Chorus Software Manager)
- SAMPJCL is a manual process to unload and install z/OS products and maintenance using SMP/E
- For either install methods, it is highly recommended to immediately apply maintenance before deployment

# CSM

- The following link describes how to install CSM  
<https://techdocs.broadcom.com/content/broadcom/techdocs/us/en/ca-mainframe-software/devops/ca-gen/8-6/installing/install-ca-gen-on-z-os/how-to-install-your-product-using-ca-csm/acquire-a-new-product.html>
- The following link describes how to install z/OS Products using CSM  
<https://techdocs.broadcom.com/content/broadcom/techdocs/us/en/ca-mainframe-software/devops/ca-gen/8-6/installing/install-ca-gen-on-z-os/how-to-install-your-product-using-ca-csm/install-a-product.html>
- The following link describes how to install z/OS PTF's using CSM  
<https://techdocs.broadcom.com/content/broadcom/techdocs/us/en/ca-mainframe-software/devops/ca-gen/8-6/installing/install-ca-gen-on-z-os/how-to-install-your-product-using-ca-csm/maintain-the-installed-products.html>

# SAMPJCL

- This is a manual process to download the product software and maintenance
- JCL provided for product and PTF installs



# Upgrade Path

- Gen 7.x (9.1.A5) thru 8.x (9.2.A6) directly to 8.6
  - Toolset must be the same schema as the model
- Gen 6.x (9.0.A2) directly to 8.6
  - Must regen and reinstall all applications and/or use the Compatibility Feature
  - Must convert model(s)
  - Must use 9.2.A6 schema toolset
  - Full application test
- Pre-Gen 6.0
  - Must install to an intermediate Ency Gen 6.x or 7.x
  - Convert Models in intermediate Ency
  - Upgrade Ency to Gen 8.6
  - Perform all the process for Gen 6.x above

# Upgrade In-Place or Create New Encyclopedia

- Key Considerations
  - Ency and tablespace requirements for a new or existing Encyclopedia
  - Model clean-up considerations
  - Backout strategy for Upgrade In-Place
- Upgrade In-Place
  - Uses same database with Gen 8.6 software
  - No model movements
  - Current and prior Gen versions can co-exist in same Encyclopedia repository by using different logon procs
- New Encyclopedia
  - Recommended when upgrading from versions older than Gen 7.0
  - More effort required to move models
  - Validate the CA Gen install before Application Upgrade

# Upgrade In-Place or Create New Encyclopedia

- Can upgrade in-place if coming from Gen r7.6 to 8.6
  - Reduced application installations
- May also upgrade in-place from Gen r7.0 and 7.5
  - Model Conversions required
- Consider creating a new Encyclopedia from releases prior to Gen 7.0
  - non-DLL's to DLL's

# Install Differences pre-Gen 8.0

- Library Names have changed and must stay consistent in SMP/E environment for PTF applications (CEHB/CEG8/CEG9).
- Added PARMLIB to retain values that were in CLIST members TIUGLOB and TIRCFIGS
- Must change logon PROC to include TIUPARML allocation and new library names.
- Create SQL, JCL, and PARMLIB (FB=80, BLKSIZE=3120)
- Eliminated TLIB library

# Incorporate Custom Changes

- In CA Gen 8.x each user exit is now a stand-alone DLL
- Must rebuild and redeploy user exit changes
- Use MKUEXITS or MK5EXITS to build the stand-alone DLL
- Site specific customizations to Clists, Panels, Skeletons, etc

# Upgrade Plan to Build and Test

- **Develop Ency Schedule**
  - Understand timeline for SMP/E product and PTF install
  - Know who will do the CEINSTAL / ITINSTAL and run CEJOBS
  - When will model conversions and toolset upgrade occur
- **Identify Resources**
  - DBA, SMP/E, CICS Admin, Developer(s), Tester(s), etc
- **Develop Test Plan**
  - Who/time to make custom and user exit changes?
  - How much will need to be regenerated?
  - Test application key transactions, screens, and batch jobs
  - EAB Source?
  - Production deployment

# Upgrade Plan to Build and Test

- Gen 7.0 onwards – Gen runtimes start becoming stand-alone DLLs
  - Requires PDSE load libraries
- Gen 8.6 – Gen runtimes are compiled with COBOL V5.1.1
  - Requires runtime support for Enterprise COBOL V5
  - May need to apply IBM PTFs to the Language Environment for the runtime support

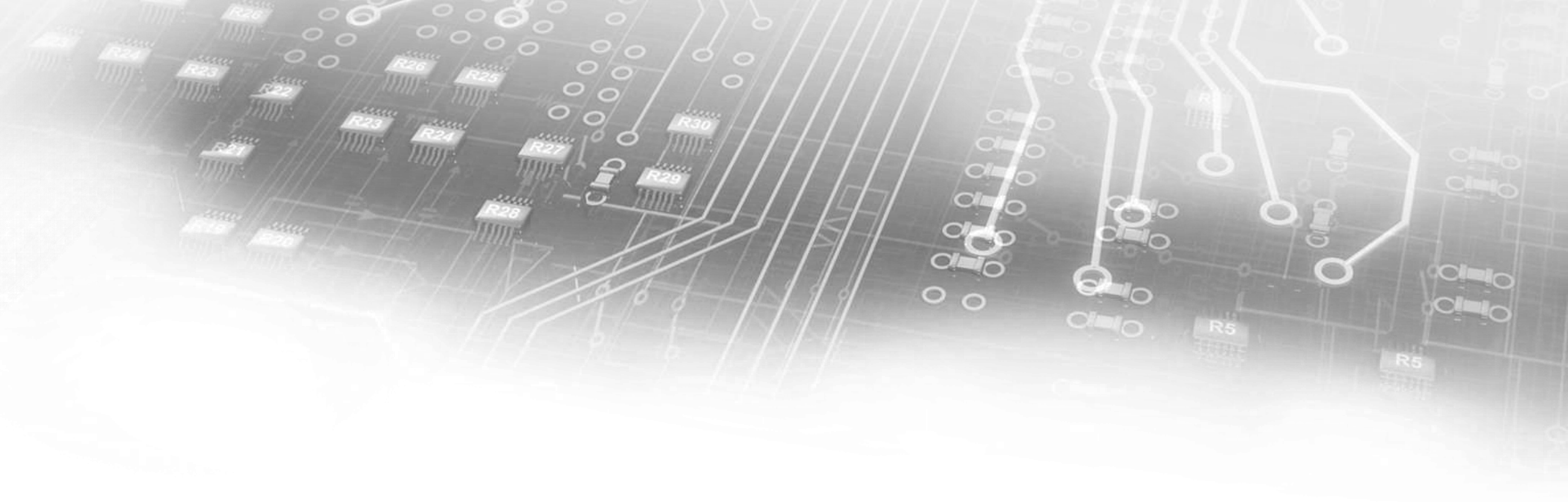
See Article 30151

[https://ca-broadcomcsm.wolkenservicedesk.com/wolken/esd/knowledgebase\\_search?articleId=30151](https://ca-broadcomcsm.wolkenservicedesk.com/wolken/esd/knowledgebase_search?articleId=30151)

# Upgrade Plan to Build and Test

- Gen 7.6 through 8.5 to 8.6
  - Runtimes fairly compatible
  - Swap runtimes, no changes to Application
- Gen 7.0 through 7.5 to 8.6
  - Runtimes may not be upwardly compatible which may require reinstall
- Gen 6.5 or earlier to 8.6
  - Move to DLL's in 7.0 necessitates full regeneration and installation
  - Consider using Compatibility Feature to isolate the impact of this change





# References



# References

- All CA Gen 8.6 z/OS and Distributed documentation including New Features, Technical Requirements, and 3rd Party Supported Products  
<https://techdocs.broadcom.com/content/broadcom/techdocs/us/en/ca-mainframe-software/devops/ca-gen/8-6.html>
- Distributed applications runtime versioning has been removed to make future upgrades of beyond 8.6 easier:  
<https://docops.ca.com/ca-gen/8-6/en/release-notes/ca-gen-release-8-6#CAGenRelease8.6-RuntimeLibraryNameChanges>  
<https://docops.ca.com/ca-gen/8-6/en/release-notes/ca-gen-release-8-6#CAGenRelease8.6-VersionNumberfromDistributedRuntimes>
- Windows applications reliance on specific Visual Studio versions also removed to make upgrades of those applications to 8.6 and beyond easier:  
<https://docops.ca.com/ca-gen/8-6/en/release-notes/ca-gen-release-8-6#CAGenRelease8.6-WindowsGUI:ExtendedSupportofPreviousMicrosoftVisualStudioCompilers>  
<https://docops.ca.com/ca-gen/8-6/en/release-notes/ca-gen-release-8-6#CAGenRelease8.6-DependencyofSpecificVisualStudioVersion>

# Upgrade Assistance

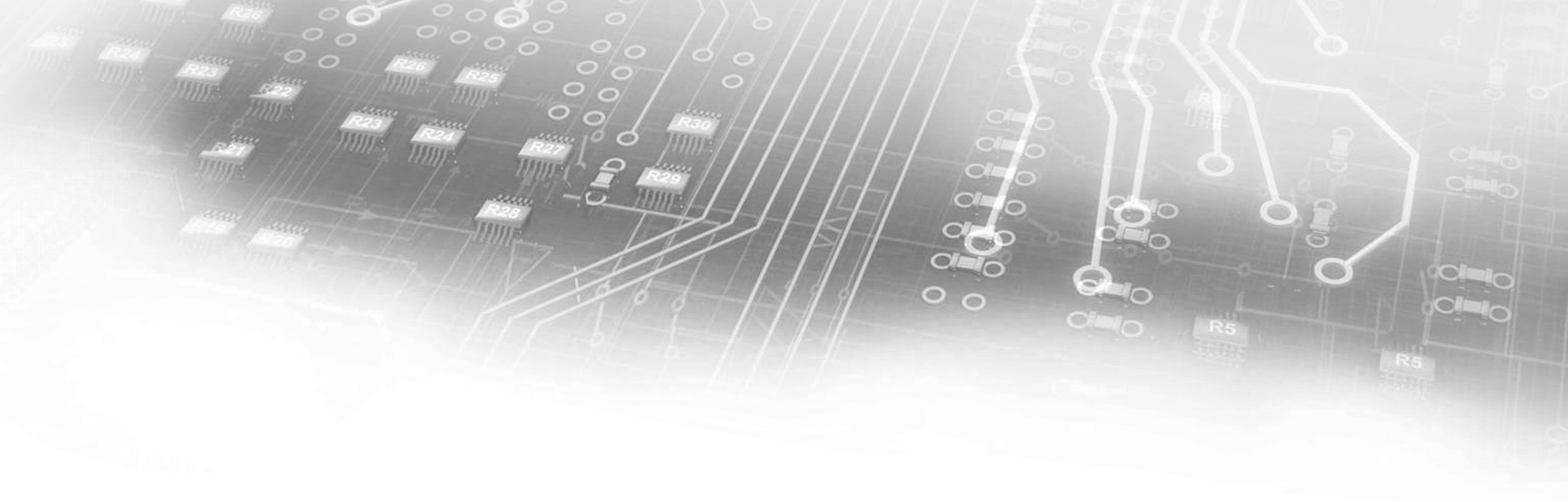
- One or more conference calls with L1 and SE/Dev
- Open a case
- Describe your environment
- Ask questions or give details on concerns

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# Q&A



Thank You





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