CA Release Automation Upgrade
Pre-Upgrade Tasks and Considerations

Table of Contents

Document History

- Created 11/15/2016 by Mike Long, SWAT

Introduction

This document is a guideline for upgrading CA Release Automation. In general, it is a listing of all of the possible things that should be taken into consideration or done before starting your upgrade. Many of these items come from real world situations or experience and for that reason this document is regularly updated.

Before starting an upgrade you must first determine which version of Release Automation you are starting your upgrade from. This will then determine the Upgrade Path you will need to follow to upgrade to the latest 6.x version of CA Release Automation.
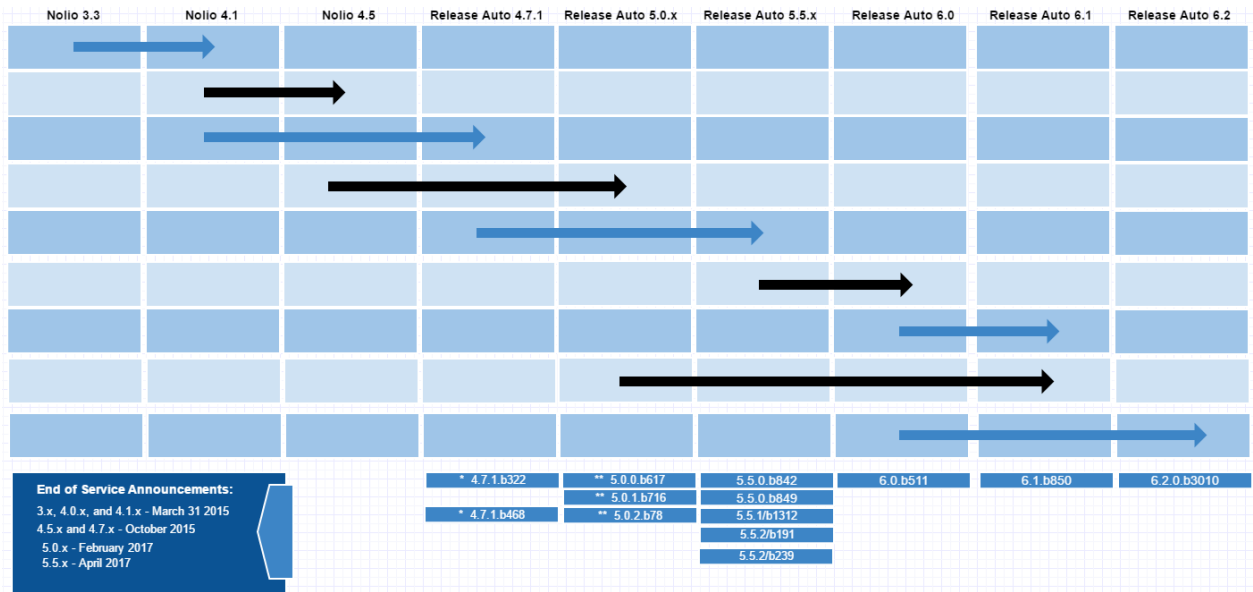
To simplify this and make it easier to understand, here are a few guidelines:
- Upgrading to the 6.1 version is Mandatory. You must upgrade to 6.1 before upgrading to the current 6.x version.
- Upgrade to 6.1 is only supported from the 5.0.2 version or higher.
- The Build of each version does not matter with the exception of the 5.0.2 version, it must have the 193 Patch applied before upgrading to the 6.1 version.
- Version between 4.5.x and 5.0.1 must be upgraded to the 5.0.2 version or higher before being upgraded to the 6.1 version.
- To upgrade versions older than 4.5.x you should contact CA Support or an Upgrade Specialist.
- Before upgrading from RA 4.7.1 you should run the "RA 4.7.1 Pre-upgrade Discovery Utility" which identifies the parameters and artifacts that will need to be updated as part of the design change within the 5.x and 6.x versions – This Utility can ONLY be executed on the 4.7.1 version.
- Agents that are at the 5.5.1 version or higher do not need to be upgraded, they will work on all versions between 5.5.1 and the current 6.x version.
- When upgrading Agents, they do not need to be upgraded to the 6.1 version first, they can be upgraded directly to the current 6.x version.

Upgrade Paths

As stated earlier upgrading to version 6.1 is mandatory before upgrading to the current 6.x version. However, depending upon the version of CA Release Automation that you are starting from, the Upgrade Path could consist of two or three different upgrades. On the website you will find two documents to assist and guide with upgrading to the current 6.x version.

- Upgrade from RA 4.5.x to 6.x – is for clients upgrading from versions 4.5.x, 4.7.1, 5.0, and 5.0.1
- Upgrade from RA 5.0.2 to 6.x – is for clients upgrading from versions 5.0.2 and higher

Most of you will be using the Upgrade from RA 5.0.2 to 6.x document which covers the following versions.
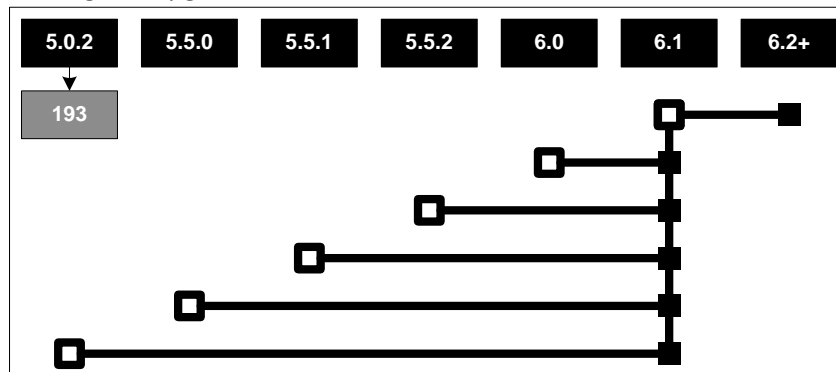

This upgrade path is verily simple with all version being upgraded to the 6.1 version and then to the current 6.x version. Only if you are starting at the 5.0.2 version do you need to apply the 193 patch.

The upgrade path for 4.5x to 5.0.1 versions is again verily simple however it does require an additional hop or upgrade. For clients with 4.7.1 to 5.0.1 version they will need to follow an upgrade path like this.
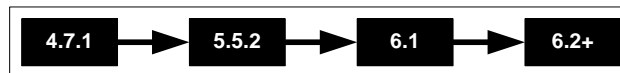
We recommend as a best practice upgrading first to the 5.5.2 version, then to the 6.1 version, and finally to the current 6.x version. Clients with 4.5.x versions will need to follow an upgrade path like this.
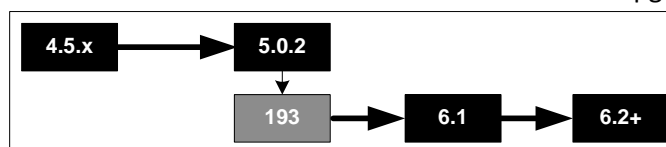
Upgrading to the 5.0.2 version, applying the 193 patch, then upgrading to the 6.1 version, and finally to the current 6.x version.

Note: Because of a design change between the 4.x and 5.x versions, when upgrading some parameters and artifacts may be overwritten and end up with no value. To identify these parameters a utility has been created called the **RA 4.7.1 Pre-Upgrade Discovery Utility**. This utility can only be run against a 4.7.1 version of CA Release Automation. Instruction for using this utility can be found in the **Upgrade from RA 4.5.x to 6.x** document listed above.

Known Upgrade Issues:
- Upgrade from 5.0.0 to 5.5.2 (Linux / Oracle) – during upgrade jms.properties file is not properly updated, one line is missed (jms.transport.port.nac=61617)

Planning your Upgrade

Before starting your upgrade you should put together a comprehensive plan involving anyone that might be impacted. The following is a list of things to consider, people to include, etc. when planning your upgrade.

- Create Upgrade Plan which should include or take into consideration these documents:
  - Hardware and Software Requirements for the 6.x version of CA Release Automation
  - Contact List – This list should include all key personal within your organization (Operations, Database Management, Networking, Release Managers, etc.) anyone or group that is a Stakeholder. It should also include CA Support and SWAT.
  - Detailed Plan – using the documents provided on the webpage start to create a detailed step by step plan for successfully completing your upgrade.
- If possible, configure Test Environment to mimic Production Environment
- Create a Testing Plan which should have different levels
  - Tests to be used on Test Environment to validate upgrade
  - Tests to be used on Production Environment to check if upgrade is successful and doesn't need to be rolled back
  - Tests to comprehensively validate that all deployments are working as planned once the upgrade has been fully completed.
  - If this is a High Availability environment, then test to validate that HA is working
- Create a Rollback Plan
- Share these Plans and setup meetings with all Stakeholders and CA to enhance and validate plans
- Update Plan accordingly
- Check with DB team on space availability in DB server for the additional space required
- Request DBA coverage on upgrade days and provide information related to upgrade
- Request Infrastructure (Operations) coverage on upgrade days and provide information related to upgrade
- Ensure the required Ports are available:
  - TCP Port 61616 between NAC and all Execution servers.
  - TCP Port 8083 between the Web browser (ROC) and NAC connection, this port is required when using the Action pack manager screen
- Send mail with RA Agent pre-requisite details to all Application teams and request them to validate that target servers meet the Pre-requisites.
- Check with Application teams to ensure that agents are up and running during the upgrade window.
- If there are any monitoring system on RA agent in target servers, the appropriate teams have to ensure that it is turned off, to ignore alerts during Upgrade activity.
- Communicate to Application teams on DB cut-off for upgrading instance
- Get signoff from each Application team that they validated their target servers meets the Agent Pre-requisites and ready for upgrade.
- Request CA Support and SWAT cover on upgrade days
- Initiate all Change Management Requests, confirm that they are signed off on and approved
- Download the software needed for the upgrade version of RA from CA and place the media on NAC and NES servers.
- Send an email with important dates of planned Upgrade activity to all Stakeholders.
- Send a reminder about that planned Upgrade activity to all Stakeholders, DBA, Infrastructure team and necessary teams

Technical Considerations

The following is a list of different things that need to be done or considered when planning your upgrade. For a more comprehensive list review the Upgrade Checklist and Upgrade Checklist – High Availability if you have an HA environment.

- Check the see if the "Run As User" functionality is using sudo, if so verify configuration files won't be overwritten or backup and then restore after upgrade
- Review any custom Action Packs or RDK Action Packs prior to upgrading
- For RA Version below 5.0 run the RA 4.7.1 Pre-Upgrade Discovery Utility to determine what parameters will be impacted by an upgrade
- Run Database Best Practice Script to clean old entries
- When upgrading Agents to RA 6.2, Java will be updated to Java 8
- CI plugins are not part of the core product and their release train is not on the same level. So outside of validating, there is nothing to upgrade or do with those. Customer will need to uninstall and then install the updated plugin if needed.
- Verify that the following network ports are open between the Servers:
  - TCP Port 61616 between all NAC and all NES servers.
  - TCP Port 8083 between the Web browser (ROC) and all NAC servers, this is required for Action Pack Manager
- Backup of all existing RA processes.
- Write down the NAC and NES Service Owners if on Windows, backup catalina.sh (Linux) or NolioService.bat (Windows) in case service startup settings are modified
- Check the permissions of the person performing the upgrade:
  - Windows - The user who performs the upgrade must have permissions to stop, start, and create Windows services.
  - Linux - The user who performs the upgrade must have the following permissions:
    - Write permissions for the CA Release Automation installation folder
    - Permissions to stop and start the Nolio Server process
- Backup all the below files and folders
  - Backup the distributed.properties file.
  - Backup the nolio-repo.properties file.
  - Backup the Actions Lib folder on the NAC server
  - Back up any custom action JAR files to an external location.
- Backup these 3 files especially if changes have been made, note these changes will need to be made to the new files after you have completed the upgrade
  - Server.xml
  - Log4j.properties (also on agents)
  - ApplicationContext-acegi-security.xml
- Backup the customer Keystore if a secured connection has been used which is stored in the JRE security folder, note this will need to be updated after the upgrade is completed
- Write down the NAC and NES Service Owners if on Windows, backup catalina.sh (Linux) or NolioService.bat (Windows) in case service startup settings are modified
- If SSL is configured take special care when upgrading and doing a rollback

Documentation Links

The following links are to various documents that should be reviewed while preparing and planning for your upgrade:

Product Documentation for RA 6.2:
- Hardware Requirements
- Upgrade CA Release Automation
- Release Notes – includes new features and enhancements, resolved issues, and known issues
- Ports and Protocols
- Working with Log Files – includes log file locations for troubleshooting
- Migration Best Practices

Communities – CA Release Automation:
- CA Release Automation 5.x / 6.x Architecture and Implantation Best Practice Guide
- Scripts to purge historical data from Database (MS SQL, Oracle, and MySQL)
- Which logs to be collected to enable support to give quick assistance?
- Where to download official Patches
- Where and How to download CA Release Automation product releases

Sample Upgrade Plan

The following is a sample Upgrade Plan that covers some of the key task that should be performed when upgrading CA Release Automation

Before Starting the Upgrade
1. User Outage announcement
2. Disable User Interface Load Balancer (if required)
3. Disable Command Interface Plugins or External systems
4. Ensure no Deployments are in Progress and that no Jobs are scheduled to run
5. Stop RA Management Server or Servers if this is an HA environment
6. Pause Database Mirroring (If required)
7. Back up the database
8. Backup the ActionsLib folder on the NAC or take a complete backup / snapshot of the NAC server

Upgrade
9. Upgrade the NAC (if this is a HA environment then only do the Primary NAC at this time)
10. Upgrade a single Execution Server
11. Upgrade a few Agents to Test Application Deployment
12. Test Application Deployment
13. Validate upgrade is successful, if not go to Rollback (Step 20 below)
14. If this is an HA environment, then upgrade the Secondary NAC
15. If this is an HA environment then the Secondary NAC will be primary, so to Primary NAC
16. Upgrade Remaining Execution Servers
17. Upgrade CI Plugins
18. Enable CI Plugins
19. Upgrade Remaining Agents

Rollback
20. Stop NAC and NES
21. Restore database to previous version
22. Revert NAC/NES to backup or uninstall and reinstall previous version of RA
23. Upgrade (uninstall and reinstall) Agents
24. Start NAC and NES
25. Enable CI Plugins