Community Viewer (CV) 3.6

Deployment, Installation, Backout,

and Rollback (DIBR) Guide



March 2021

Version 1.0

Department of Veterans Affairs (VA)

Office of Information and Technology (OIT)

Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Version | Description | Author |
| 03/02/2021 | 1.0 | Addressed feedback and submitting the document for approval | Liberty ITS |
| 02/26/2021 | 0.2 | Comments addressed and updates included | Liberty ITS |
| 02/19/2021 | 0.1 | Initial draft of document from last approved | Liberty ITS |

Artifact Rationale

This document describes the Deployment, Installation, Backout, and Rollback (DIBR) Guide for Community Viewer releases going into the VA Enterprise. The Guide includes information about system support, issue tracking, escalation processes, and roles and responsibilities involved in all those activities. Its purpose is to provide clients, stakeholders, and support personnel with a smooth transition to the new product or software, and it should be structured appropriately to reflect the particulars of these procedures at a single or at multiple locations.

Per the Veteran-focused Integrated Process (VIP) Guide, the DIBR Guide is required to be completed prior to production deployment, with the expectation that it is updated throughout the life cycle of the project for each build, as needed.

Table of Contents

[1. Introduction 1](#_Toc65584711)

[1.1. Purpose 1](#_Toc65584712)

[1.2. Dependencies 1](#_Toc65584713)

[1.3. Constraints 2](#_Toc65584714)

[2. Roles and Responsibilities 2](#_Toc65584715)

[3. Deployment 3](#_Toc65584716)

[3.1. Timeline 3](#_Toc65584717)

[3.2. Site Readiness Assessment 3](#_Toc65584718)

[3.2.1. Deployment Topology (Targeted Architecture) 4](#_Toc65584719)

[3.2.2. Site Information (Locations, Deployment Recipients) 6](#_Toc65584720)

[3.2.3. Site Preparation 6](#_Toc65584721)

[3.3. Resources 6](#_Toc65584722)

[3.3.1. Facility Specifics 6](#_Toc65584723)

[3.3.2. Hardware 6](#_Toc65584724)

[3.3.3. Software 7](#_Toc65584725)

[3.3.4. Communications 8](#_Toc65584726)

[3.3.4.1. Deployment/Installation/Backout Checklist 8](#_Toc65584727)

[4. Installation 8](#_Toc65584728)

[4.1. Preinstallation and System Requirements 8](#_Toc65584729)

[4.2. Platform Installation and Preparation 8](#_Toc65584730)

[4.3. Download and Extract Files 9](#_Toc65584731)

[4.4. Database (DB) Creation 9](#_Toc65584732)

[4.5. Installation Scripts 9](#_Toc65584733)

[4.6. Cron Scripts 9](#_Toc65584734)

[4.7. Access Requirements and Skills Needed for the Installation 9](#_Toc65584735)

[4.8. Installation Procedures 10](#_Toc65584736)

[4.8.1. Preinstallation Procedures 10](#_Toc65584737)

[4.8.2. Installation at Primary and Failover Operating Environments 10](#_Toc65584738)

[4.8.2.1. Update the CV Database (DB) (~15 minutes) 10](#_Toc65584739)

[4.8.2.2. Install jMeadows-Community Care Provider (CCP) (~30 minutes) 11](#_Toc65584740)

[4.8.2.3. Install the CV application for CCP users (~30 minutes) 12](#_Toc65584741)

[4.8.2.4. Install VistA Data Service (VDS) (~15 minutes) 13](#_Toc65584742)

[4.8.2.5. Install Report Builder (~30 minutes) 14](#_Toc65584743)

[4.9. Installation Verification Procedures 14](#_Toc65584744)

[4.10. System Configuration 16](#_Toc65584745)

[4.11. DB Tuning 17](#_Toc65584746)

[5. Backout Procedures 17](#_Toc65584747)

[5.1. Backout Strategy 17](#_Toc65584748)

[5.2. Backout Considerations 17](#_Toc65584749)

[5.3. Backout Criteria 17](#_Toc65584750)

[5.4. Backout Risks 17](#_Toc65584751)

[5.5. Authority for Backout 17](#_Toc65584752)

[5.6. Backout Procedures 17](#_Toc65584753)

[5.7. Backout Verification Procedures 17](#_Toc65584754)

[6. Rollback Procedures 17](#_Toc65584755)

[6.1. Rollback Considerations 18](#_Toc65584756)

[6.2. Rollback Criteria 18](#_Toc65584757)

[6.3. Rollback Risks 18](#_Toc65584758)

[6.4. Authority for Rollback 18](#_Toc65584759)

[6.5. Rollback Procedures 18](#_Toc65584760)

[6.6. Rollback Verification Procedures 19](#_Toc65584761)

[Appendix A. Acronyms and Abbreviations 20](#_Toc65584762)

Table of Figures

[Figure 1: CV Production Hardware Architecture 5](#_Toc65584763)

[Figure 2: QoS Validation Expected Result 15](#_Toc65584764)

[Figure 3: jMeadows Validation Expected Result 15](#_Toc65584765)

[Figure 4: VDS Validation Expected Result 16](#_Toc65584766)

Table of Tables

[Table 1: Project Roles 2](#_Toc65584767)

[Table 2: DIBR Roles and Responsibilities 2](#_Toc65584768)

[Table 3: Site Preparation 6](#_Toc65584769)

[Table 4: Virtual Machine (VM) Hardware Specifications 6](#_Toc65584770)

[Table 5: Software Specifications 7](#_Toc65584771)

[Table 6: Deployment/Installation/Backout Checklist 8](#_Toc65584772)

[Table 7: Implementation Plan Summary 9](#_Toc65584773)

[Table 8: Acronyms and Abbreviations 20](#_Toc65584774)

# Introduction

Community Viewer (CV) is a browser-based software application that facilitates the secure exchange of data between Department of Veterans Affairs (VA) systems and non-VA providers, known as Community Care Providers (CCPs). The exchange of data improves the coordination of care and continuity of care for VA patients receiving treatment outside of the VA network.

CV pulls information from VA health care systems in real time for viewing within a web browser. Through CV, VA Administrative Staff (VA Staff [VAS]) assign patients to CCPs and provision CCP use within the CV system, allowing CCPs access to view consolidated patient data from multiple Veterans Information Systems and Technology Architecture (VistA) systems.

## Purpose

The Deployment, Installation, Backout, and Rollback (DIBR) Guide provides a single, common document that defines the ordered, technical steps required to install and deploy the CV product. Further, it outlines the steps to back out of the installation and roll back to the previously installed version of the product if necessary. The installation process is completed at the two VA data centers, located at the Austin Information Technology Center (AITC) and the Philadelphia Information Technology Center (PITC).

System design specifications and diagrams can be found in the REDACTED.

Figure 1 illustrates CV as deployed in the AITC and PITC Production environments.

## Dependencies

CV is dependent on ancillary services that connect the application to specific data sources which are listed in the CV 3.6 Production Operations Manual (POM). If any of these sources encounter a disruption in data services, the data is not pulled into CV.

 **NOTE:** Additional functionality was added to align with the Joint Longitudinal Viewer (JLV) version 2.9.2 product release. In particular, CV now connects to the JLV Electronic Health Record Modernization (EHRM) Service which adds Cerner Millennium to the set of external data sources that CV can retrieve clinical data from. This set of data, known collectively as the Federal Electronic Health Record (FEHR) includes Department of Defense (DoD) medical treatment facilities and VA sites that have transitioned from VistA to Cerner Millennium. At the time of the CV v3.6 release, required approvals were not in place to allow CV to display DoD data to its Community Care Provider users. Therefore, all data from Cerner Millennium are turned off.

CV is also dependent on internal VA update requirements, including database (DB) flips, server updates, and security patches. If any of the Enterprise VA operational procedures disrupt the normal operation of CV, the application may not be fully functional.

The physical environment, which provides security and environmental control over the CV servers, is restricted by Elevated Privilege (EP) access. Project personnel request EP access by submitting the *CV Linux (Centrify) and Windows Access Requirements* spreadsheet to the VA Project Manager (PM)/Contracting Officer’s Representative (COR) for approval via the Electronic Permission Access System (ePAS). Any delay in granting initial EP access hinders the ability to respond to technical impacts to the servers.

## Constraints

Not applicable to CV.

# Roles and Responsibilities

Table 1 and Table 2 list the project and DIBR roles and responsibilities.

Table 1: Project Roles

| Name | Title/Group | Company |
| --- | --- | --- |
| REDACTED | Health Portfolio, OIT/Enterprise Project Management Division (EPMD) Joint Longitudinal Viewer (JLV)/CV Program Manager | VA |
| REDACTED | CV Project Manager (PM) | VA |
| REDACTED | Contract Program Manager | Liberty ITS |
| REDACTED | Contract Project Manager | Liberty ITS |
| REDACTED | Contract Project Manager | Liberty ITS |
| REDACTED | CV Operations Lead | Liberty ITS |
| REDACTED | CV Operations | Liberty ITS |
| REDACTED | CV Operations | Liberty ITS |
| REDACTED | CV Operations | Liberty ITS |
| REDACTED | CV Development Lead | Liberty ITS |
| REDACTED | CV Java Developer | Liberty ITS |
| REDACTED | CV Java Developer | Liberty ITS |
| REDACTED | System Architect | Liberty ITS |
| REDACTED | System Engineer/Data Center | Seawolf |

Please note that references to the CV Support indicate Liberty project team Operations and Engineers. See Table 6 for additional details regarding the Phase/Role column of Table 2.

Table 2: DIBR Roles and Responsibilities

| Team | Phase/Role | Tasks |
| --- | --- | --- |
| Enterprise Project Management Office (EPMO)/EPMD | Approval for Release to Production | Review the Release Readiness Report (RRR) with CV PM and Health Product Support (HPS) for approval; review and approve the ServiceNow (SNOW) board entry |
| CV Support | Deployment | * Plan and schedule deployments (including orchestration with vendors)
* Determine and document the roles and responsibilities of those involved in deployments
* Test for operational readiness
* Execute deployments
 |
| CV Support | Installation | * Plan and schedule installations
* Ensure that the Authority to Operate (ATO) and certificate authority security documentation is in place
* Validate through facility Points of Contact (POC) that Information Technology (IT) equipment has been accepted using the asset inventory processes
* Coordinate training
 |
| CV Support | Backout | * Confirm the availability of backout instructions and backout strategy
* Identify the criteria that triggers a backout
 |
| CV Support | Rollback | * Confirm the availability of rollback instructions and rollback strategy
* Identify the criteria that triggers a rollback
 |
| CV Support | Post-Deployment | Provide hardware, software, and system support |
| CV Support | Post- Deployment | Production testing is verified |

# Deployment

The CV deployment workflow is outlined below.

1. Once EPMO approval is complete, the CV Support team schedules the deployment with Infrastructure Operations (IO)
2. Once CV is deployed to the Production environment, Production testing is verified by the CV Support team; please see [Access Requirements and Skills Needed for the Installation](#_Access_Requirements_and) for additional information
3. If there is an issue with the deployment, the project may decide to proceed with a backout; refer to [Backout Strategy](#_Backout_Strategy) for more information

## Timeline

The deployment and installation have a duration of 8 hours per environment.

## Site Readiness Assessment

CV servers deployed in the AITC and PITC Production environments (cloud and non-cloud) are utilized to host the CV web application and its associated services.

IO assesses the non-cloud, public-facing servers; CV Support Team assesses the internal servers, also referred to as cloud servers.

### Deployment Topology (Targeted Architecture)

CV has environments at the PITC and AITC data centers. The primary operating environment is at PITC, with AITC serving as the failover site. Server details are documented in Table 4.

Figure 1 represents the targeted VA Staff and CCP architectures for the CV web application. System design specifications and diagrams can be found in the REDACTED. See [Purpose](#_Purpose) for the link to the repository.

 **NOTE:** Additional functionality was added to align with the JLV version 2.9 product release. In particular, CV now connects to the JLV EHRM Service which adds Cerner Millennium to the set of external data sources that CV can retrieve clinical data from. This set of data, known collectively as the Federal Electronic Health Record (FEHR) includes DoD medical treatment facilities and VA sites that have transitioned from VistA to Cerner Millennium. At the time of the CV v3.6 release, required approvals were not in place to allow CV to display DoD data to its CCP users. Therefore, all data from Cerner Millennium are turned off.

The figure below reflects the use of the EHRM Service server at both AITC and PITC. The figure also depicts the connection to the Cerner Fast Healthcare Interoperability Resources (FHIR) API. For the CV v3.6 release, as noted above, this functionality has been disabled, therefore Cerner FHIR data will not display in the following widgets: Allergies, Appointments, Inpatient Medications, Labs, Immunizations, Documents, FEHR/MHS Genesis Outpatient Medications, Orders, Progress Notes, Social, Family and Other Histories, as well as demographic information.

Figure 1: CV Production Hardware Architecture[[1]](#footnote-2)



### Site Information (Locations, Deployment Recipients)

VA AITC and PITC host the CV web application and its system components.

### Site Preparation

Servers have the latest program updates and security patches. These updates are performed on a regular, monthly patching schedule.

Table 3 describes the preparations required by the site(s) prior to deployment.

Table 3: Site Preparation

| Site/Other | Problem/Change Needed | Features to Adapt/Modify to New Product | Actions/Steps | Owner |
| --- | --- | --- | --- | --- |
| AITC / PITC | Security Patches/Program Updates | None identifiable | Implement/Verify | IO |

## Resources

The installation and deployment process for:

* CV components in the cloud environment is performed by the CV Support team.
* CV web application in the non-cloud (on prem) environment is performed and managed by IO.

Descriptions of the hardware, software, facilities, and documentation are detailed in the following subsections.

### Facility Specifics

The CV application is deployed in PITC as the primary production site, with AITC serving as the failover site. See Figure 1 above for additional details.

### Hardware

Table 4 describes the hardware specifications required at each site prior to deployment. Please see Table 2 for details about the party(ies) responsible for preparing the site to meet the hardware specifications.

Table 4: Virtual Machine (VM) Hardware Specifications

| Required Hardware | Model | Configuration | Manufacturer | Server Count |
| --- | --- | --- | --- | --- |
| CV Web Application (for VA Staff users) | Red Hat Enterprise Linux Server release 6.9 (Santiago) | 2 Central Processing Units (CPUs), 16 Gigabytes (GB) Random Access Memory (RAM) | Virtual | 2 Servers for AITC |
| Red Hat Enterprise Linux Server release 7 (Maipo) | 4 CPUs, 16 GB RAM | Virtual | 2 Servers for PITC |
| CV Web Application (for CCP users) | Red Hat Enterprise Linux Server release 6.9 (Santiago) | 2 CPUs, 16 GB RAM | Virtual | 3 Servers for AITC |
| Red Hat Enterprise Linux Server release 7 (Maipo) | 4 CPUs, 16 GB RAM | Virtual | 3 Servers for PITC |
| VDS Servers | Red Hat Enterprise Linux Server release 6.9 (Santiago) | 2 CPUs, 16 GB RAM | Virtual | 3 Servers for AITC |
| Red Hat Enterprise Linux Server release 7 (Maipo) | 8 CPUs, 16 GB RAM | Virtual | 4 Servers for PITC |
| jMeadows/ QoS/ Report Builder Servers | Red Hat Enterprise Linux Server release 6.9 (Santiago) | 2 CPUs, 16 GB RAM | Virtual | 4 Servers for AITC |
| Red Hat Enterprise Linux Server release 7 (Maipo) | 8 CPUs, 16 GB RAM | Virtual | 4 Servers for PITC |
| CV DB Servers | Microsoft (MS) Windows Server 2012 R2 Standard | 2 CPUs, 16 GB RAM | Virtual | 2 Servers for AITC |
| Microsoft (MS) Windows Server 2012 R2 Standard | 8 CPUs, 28 GB RAM | Virtual | 2 Servers for PITC |

### Software

Table 5 describes the software specifications required at each site prior to deployment. Please see Table 2 for details about the party(ies) responsible for preparing the site to meet the software specifications.

Table 5: Software Specifications

| Required Software | Make | Version | Manufacturer | Other |
| --- | --- | --- | --- | --- |
| MS Structured Query Language (SQL) Server  | N/A | 2012 R2 | MS | N/A |
| Oracle WebLogic Server  | N/A | 12.1.3 | Oracle | N/A |
| Apache | N/A | 2.2.15/ | Apache | N/A |
| SiteMinder | N/A | 12.51 | Computer Associates (CA) Technologies | N/A |

More information about SSOi server installation can be found in the CA SiteMinder Apache Web Agent Install & Configuration Guide, maintained by Identity and Access Management (IAM).

### Communications

IO performs the installation and deployment activities in the virtualized environments, utilizing the release-ready package provided by the Liberty project team. When possible, the installation is performed during off-hours to minimize the impact on users.

An overview of typical steps and communication during the implementation process is as follows:

1. Submit a CV release notification via SNOW /Change (CHG) Order
2. Plan system downtime and change notifications:
	1. Notify the CV PM and the OIT PM/COR
3. Back up the systems and/or current deployment
4. Perform the installation/deployment:
	1. Remove the current installation from service and deploy the new version
5. Validate installation:
	1. Verify the IO cloud installation
	2. Verify the IO non-cloud (on prem) installation
6. Notify the stakeholders and Product team that systems are online

#### Deployment/Installation/Backout Checklist

Table 6 gives details for the deployment, installation, and backout checklist.

Table 6: Deployment/Installation/Backout Checklist

| Activity | Day | Time | Task Owner |
| --- | --- | --- | --- |
| Deployment | Joint decision between VA PMs | Deployment is dependent on a planned maintenance ticket | CV Support / IO |
| Installation | Coordinated with IO | Coordinated with IO | CV Support |
| Backout | As needed | As needed, with a time estimate to be communicated to stakeholders when determined | CV Support / IO |

# Installation

## Preinstallation and System Requirements

Please see the [Hardware](#_Hardware) and [Software](#_Software) sections for information regarding preinstallation system requirements.

## Platform Installation and Preparation

Refer to the JLV/CV Software Configuration Management (CM) Plan for more information about CV installation and deployment. Once approved, all project documentation is available on the REDACTED.

Table 7: Implementation Plan Summary

| Considerations | Associated Details |
| --- | --- |
| What systems are affected? | **Component:** | **Deployed to:** |
| CV Web Application (for VA Staff and RM users) | Cloud Environment |
| CV Web Application (for CCP users) | Non-Cloud Environment |
| CV Report Builder | Cloud Environment |
| jMeadows Data Service | Cloud Environment |
| CV DB | Cloud Environment |
| VDS | Cloud Environment |
| CV QoS | Cloud Environment |
| Who is impacted by the change? | CV users |
| What is the estimated timeframe for restoring service? | 8 hours total for installation activities |
| What pre-implementation work is required? | Download installation files |

## Download and Extract Files

All software installation files for this release will be staged in the /u01/CV\_HOME/builds/target. Installation file locations and the chronological steps for downloading and extracting the software prior to installation are held in a VA Development location, accessible via EP access. Refer to Installation Procedures for more information.

## Database (DB) Creation

The CV DB is created with a restore DB schema. The DB is a SQL Server 2012 DB, used to store community provider account information, patient assignments to community providers, user profile information, and audit records.

System design specifications and diagrams can be found in the REDACTED. See [Purpose](#_Purpose) for the link to the repository.

## Installation Scripts

There are no installation scripts used in the deployment of CV. The application is installed manually with oversight by the CV Support team.

## Cron Scripts

Not applicable to CV.

## Access Requirements and Skills Needed for the Installation

EP access is required for installation activities. CV System Engineers have been granted VA EP, and they are designated to access the application servers for deployment, maintenance, and backout activities. This document assumes the installer has knowledge and experience with the Windows and Linux operating systems, Oracle WebLogic, and SQL Server, in addition to a general understanding of web-based applications and familiarity with networking and basic troubleshooting, such as Telnet and ping.

## Installation Procedures

The subsections below detail the preinstallation and installation procedures performed by the CV Support team in the cloud environment. IO performs the same preinstallation and installation procedures in the non-cloud (on prem) environment.

A detailed list of the servers referenced in the installation procedures can be found in the REDACTED. See [Purpose](#_Purpose) for the link to the repository.2

### Preinstallation Procedures

Prior to executing the installation procedures detailed in Installation at Primary and Failover Operating Environments, the CV Support team completes the following procedures in the cloud environment. IO performs the same preinstallation procedures in the non-cloud environment.

Before deploying the new release, verify that IO created a backup of the currently deployed CV systems:

 **NOTE:** IO generates nightly snapshots for each of the Production servers.

Manually generate a backup of the CV DBs by running the *Backup DB* task through SQL Server Management Studio (SSMS) using D:\DBBackups as the default save point:

1. Back up CV DBs
2. Archive the backup files per IO procedures and the CV 3.6 POM (See [Platform Installation and Preparation](#_Platform_Installation_and) for the link to the repository)
	1. Archived application .war files are stored in: D:\builds\archive
3. Record the CV software version number to be installed (for reference), as well as the software version number of the previous installation
	1. These numbers are detailed in the installation checklist used by IO and the CV Support team

### Installation at Primary and Failover Operating Environments

Complete these installation steps at the failover site (AITC) first, validate the installation according to the steps in Installation Verification Procedures, route users to the failover site (AITC), then perform these installation steps at the primary site (PITC). See Deployment Topology (Targeted Architecture) for identification of primary (PITC) and failover (AITC) sites.

The following installation steps are completed by the CV Support team. IO performs these same installation procedures in the non-cloud (on prem) environment.

#### Update the CV Database (DB) (~15 minutes)

**Note:** No updates are required for the CV 3.6 release. When updates are required, the following steps will be followed:

1. Remote desktop into the DB server
2. Open MS SQL Management Studio (SSMS)
3. Connect to localhost in SSMS
4. Open the SQL Script, CV\_3.6.0.0.0\_update.sql, provided with the CV 3.x Source code package submission
5. Execute the SQL script CV\_3.6.0.0.0\_update.sql
6. Repeat steps 1–5 on the backup DB server

#### Install jMeadows-Community Care Provider (CCP) (~30 minutes)

1. Access the server using Remote Secure Access or Citrix
2. SSH in to the jMeadows and CV QoS server
3. Upload the CVjMeadowsCCP-3.6.0.0.0-production.war build to /u01/CV\_HOME/builds/target directory on the jMeadows server
4. Copy the previously deployed CVjMeadowsCCP-3.5.0.0.0-production.war build as a backup in the /u01/CV\_HOME/builds/archive directory
5. Validate that the following external endpoint web service is available by testing connectivity using curl on the jMeadows servers:
	1. **Example:** Run the command (Note: This is the load balancer URL): REDACTED.
	2. The installer should expect to see the endpoint URL page with no errors
6. Log in to the WebLogic Admin console on the jMeadows server
7. Undeploy the previously deployed CVjMeadowsCCP-3.5.0.0.0-production.war build through the WebLogic Admin console
	1. Click the Deployments link
	2. Click **Lock & Edit**
	3. Click the checkbox next to the previous jMeadows deployment
	4. Click **Delete**
	5. Click **OK** to confirm removal
	6. Once removal is complete, click **Activate Changes**
8. Install the CVjMeadowsCCP-3.6.0.0.0-production.war build through the WebLogic Admin console
	1. The .war files are staged in the /u01/CV\_HOME/builds/target directory
	2. Click the Deployments link
	3. Click **Lock & Edit**
	4. Click **Install**
	5. On the next page, type in the path to the location of the .war file in /u01/CV\_HOME/builds/target
	6. Click the radio button next to the jMeadows build to be deployed, and click **Next**
	7. Set the application name to CVjMeadowsCCP-3.6.0.0.0
	8. Click **Finish** to complete installation to the jMeadows cluster
	9. Once the deployment is complete, click **Activate Changes**
9. Start the application, and verify its state is active using the **Monitoring** tab
	1. Click the Deployments link in the **Domain Structure** window of the WebLogic Admin console
	2. Click the recently installed application, and select **Start**
	3. Once started, the **State** column indicates “Active”
10. Validate that the following external endpoint web service is available by testing connectivity using curl on the jMeadows servers using the environment-specific servers and ports found in the WebLogic Admin console:
	1. Example: Run the command: REDACTED. Install the CV application for CCP users (~30 minutes)
11. SSH into Web server
12. Upload the CV-CCP-3.6.0.0.0-production.war build to /u01/CV\_HOME/builds/target directory on the Web server
13. Copy the previously deployed CV-CCP-3.5.0.0.0-production.war build as a backup in the /u01/CV\_HOME/builds/archive directory
14. Validate that the following external endpoint web service is available by testing connectivity using curl on the web servers:
	1. **Example:** Access the public webpage using a web browser to the following URL: REDACTED.
	2. The installer should expect to see the endpoint URL page with no errors
15. Log in to the WebLogic Admin console on the Web server
16. Undeploy the previously deployed CV-CCP-3.5.0.0.0-production.war build through the WebLogic Admin console
	1. Click the Deployments link
	2. Click **Lock & Edit**
	3. Click the checkbox next to the previous CV-CCP deployment
	4. Click **Delete**
	5. Click **OK** to confirm removal
	6. Once removal is complete, click **Activate Changes**
17. Deploy the *CV-CCP-3.6.0.0.0*-production.war build through the WebLogic Admin console
	1. The .war files are staged in the /u01/CV\_HOME/builds/target directory
	2. Click the Deployments link
	3. Click **Lock & Edit**
	4. Click **Install**
	5. Type the path to the location of the .war file (/u01/CV\_HOME/builds/target) on the next page
	6. Click the radio button next to the CV-CCP build to be deployed, and click **Next**
	7. Set the application name to CV-CCP-3.6.0.0.0
	8. Click **Finish** to complete the installation to the CV-CCP cluster
	9. Once the deployment is complete, click **Activate Changes**
18. Start the application, and verify its state is active using the **Monitoring** tab
	1. Click the Deployments link in the **Domain Structure** window of the WebLogic Admin console
	2. Click the recently installed application, and select **Start**
	3. Once started, the **State** column indicates “Active”
19. Validate that the CV web portal is available by testing connectivity through a web browser, outside of the CV servers, using the public URL from step d

#### Install VistA Data Service (VDS) (~15 minutes)

1. SSH in to VDS server
2. Upload the CVVistaDataService-3.6.0.0.0-production.war build to /u01/CV\_HOME/builds/target directory on the VDS server
3. Copy the previously deployed CVVistaDataService-3.5.0.0.0-production.war build as a backup in the /u01/CV\_HOME/builds/archive directory
4. Validate that the following external endpoint web service is available by testing connectivity using curl on the VDS servers:
	1. **Example:** Run the command (Note: This is the load balancer URL): REDACTED.
	2. The installer should expect to see the endpoint URL page with no errors
5. Log in to the WebLogic Admin console on the VDS server
6. Undeploy the previously deployed CVVistaDataService-3.5.0.0.0-production.war build through the WebLogic Admin console
	1. Click the Deployments link
	2. Click **Lock & Edit**
	3. Click the checkbox next to the previous VistaDataService deployment
	4. Click **Delete**
	5. Click **OK** to confirm removal
	6. Once removal is complete, click **Activate Changes**
7. Deploy the CVVistaDataService-3.6.0.0.0-production.war build through the WebLogic Admin console
	1. The .war files are staged in the /u01/CV\_HOME/builds/target directory
	2. Click the Deployments link
	3. Click **Lock & Edit**
	4. Click **Install**
	5. Type the path to the location of the .war file (/u01/CV\_HOME/builds/target) on the next page
	6. Click the radio button next to the VistaDataService build to be deployed, and then click **Next**
	7. Set the application name to CVVistaDataService-3.6.0.0.0
	8. Click **Finish** to complete installation to the VistaDataService cluster
	9. Once the deployment is complete, click **Activate Changes**
8. Start the application, and verify its state is active using the **Monitoring** tab
	1. Click the Deployments link in the **Domain Structure** window of the Admin Console
	2. Click the recently installed application, and select **Start**
	3. Once started, the **State** column indicates “Active”
9. Validate that the following external endpoint web service is available by testing connectivity using curl on the VDS servers using the environment-specific servers and ports found in the WebLogic Admin console:
	1. **Example:** Run the command (Note: This is the load balancer URL): REDACTED.

#### Install Report Builder (~30 minutes)

1. Copy *setupReportBuilder-3.6.0.0.0-production.zip* onto the target jMeadows using WinSCP to /tmp directory
2. SSH in to the jMeadows server
3. Copy the previously deployed reportbuilder-3.5.0.0.0-production.jar build as a backup in the /u01/CV\_HOME/builds/archive directory.
4. Execute the following commands from the command line:
	1. cd /tmp
	2. unzip setupReportBuilder-3.6.0.0.0-production.zip
	3. dzdo nano setuprb.sh
	4. dzdo ./setuprb.sh
5. Using WinSCP, copy *reportbuilder-3.6.0.0.0-production.jar* into /var/reportbuilder on the target server.
6. Execute the following commands from the command line:
	1. dzdo ln -s /var/reportbuilder/reportbuilder-3.6.0.0.0-production.jar

/etc/rc/d/init.d/reportbuilder

* 1. dzdo service reportbuilder restart
1. Verify the service is running by executing the following command:
	1. ps aux | grep reportbuilder | grep -v grep
2. Verify the port is listening by executing the following command:
	1. netstat -an | grep LISTEN | grep 7012

## Installation Verification Procedures

After completing the installation process detailed in [Installation Procedures](#_Installation_Procedures), perform a manual smoke test. Use the steps below to test each module as an end user to validate the installation, deployment, and functionality of all CV applications and services.

A detailed list of the servers referenced in the installation verification procedures can be found in REDACTED. See [Purpose](#_Purpose) for the link to the repository.

1. Validate that Quality of Service (QoS) is running by verifying that QoS is writing updates to the DB in the QoS\_LOGS table
	1. Run the following command in SSMS on the active MSSQL server: select top 100 \* from cv.dbo.QOS\_LOGS and order by date desc
		1. **Expected Result:** The select top 100\* results will be displayed and indicate a time stamp of within 5 minutes of the time the query was run
		2. If the top rows do not show, double check the installation steps

Figure 2: QoS Validation Expected Result



1. Validate that jMeadows is running by testing the connection to the Web Service Description Language (WSDL) on a Linux machine
	1. Run the wget command to confirm the download of the wsdl
	2. Wget –no-check-certificate https://<hostname>:<443> /jMeadows/JMeadowsDataService?wsdl
		1. **Expected Result:** The wsdl shows in the terminal window
		2. If the wsdl does not show in the terminal window, double check the installation steps

Figure 3: jMeadows Validation Expected Result



1. Validate Report Builder:
	1. Verify the service is running by executing the following command:
		1. ps aux | grep reportbuilder | grep -v grep
	2. Verify the port is listening by executing the following command:
		1. netstat -an | grep LISTEN | grep 7012
2. Validate that VDS is running by testing the connection to WSDL on a Linux machine
	1. Run the wget command to confirm the download of the wsdl
	2. Wget –no-check-certificate https://<hostname>:<443> /VistaDataService/VistaDataService?wsdl
		1. **Expected Result:** The wsdl shows in the terminal window
		2. If the wsdl does not show in the terminal window, double check the installation steps

Figure 4: VDS Validation Expected Result



1. Validate HTTP Strict Transport Security (HSTS) compliance at the following address: https://securityheaders.com/?q=https%3A%2F%2Fwww.communityviewer.va.gov%2F&hide=on
	1. **Expected Result:** TheStrict Transport Security will be in a green dialog box with a checkmark.
2. Validate that the system status appears on the CV Login page (internal [VAS])
	1. **Expected Result:** The system status should show a circular, green icon with a checkmark
3. Validate the ability to log in with VA credentials (internal [VAS])
4. Validate that VA data displays within the CV widgets using test patients Clinical/Health Data Repository (CHDR) 1 and CHDR 2 (internal [VAS])
5. Validate that VA terminology mapping occurs (internal [VAS])
	1. **Expected Result:** VA terminology is properly mapped in the CV widgets
6. Validate that the system status displays on the CV Login page (external)
	1. **Expected Result:** The system status should show a circular, green icon with a checkmark
7. Validate the ability to log in with CCP credentials (external [CCP])
	1. Check for no Cerner connection status icon
	2. Verify that no Cerner data is displaying in the following widgets: Allergies, Appointments, Inpatient Medications, Labs, Immunizations, Documents, FEHR/MHS Genesis, Outpatient Medications, Orders, Progress Notes, Social, Family and Other Histories, as well as demographic information.

## System Configuration

Table 4 describes the server configuration for CV Production infrastructure.

## DB Tuning

Not applicable to CV.

# Backout Procedures

A backout is performed before a rollback. The backout procedures remove the newly installed components if the CV deployment did not pass the installation verification procedures. Both backout and rollback are performed consecutively for each CV component to return to the last known good operational state of the software and platform settings.

## Backout Strategy

The backout strategy is to uninstall the currently deployed CV system components and restore the previously deployed version of CV.

## Backout Considerations

There are no considerations for backing out of the current installation of CV.

## Backout Criteria

The criteria for backing out the current installation is that CV does not operate as intended when tested by VA OIT and the CV Project Ops Team.

## Backout Risks

The risks for executing the backout are minimal, because a backout is performed during a previously announced downtime when users are not accessing the system. When the restored system is online and validated, user access continues.

If a backout is initiated later in the deployment window, restoration time may exceed the planned downtime for deployment. This risk is mitigated by scheduling deployments for weekends and other times when expected usage levels are low.

## Authority for Backout

If a backout is necessary, approval for the backout comes from the current VA PM.

## Backout Procedures

Because backout and rollback are performed consecutively, the backout and rollback procedures are combined in [Rollback Procedures](#_Rollback_Procedures).

## Backout Verification Procedures

See [Installation Verification Procedures](#_Installation_Verification_Procedure).

# Rollback Procedures

A rollback is performed after a backout. The rollback procedures restore the previously deployed version of CV.

## Rollback Considerations

The consideration for performing a rollback is that the CV application does not operate as intended when tested by the CV Support team.

## Rollback Criteria

The criteria for performing a rollback is that the CV application does not operate as intended when tested by the CV Support team.

## Rollback Risks

The rollback procedures restore the previously deployed version of CV. Rollback is performed after a backout. The risks for executing a rollback are minimal, because the procedure is performed during a planned and announced downtime when users are not accessing the system. Therefore, users would not have accessed the newly deployed version of CV and changes to user configuration files would not have occurred. When the system is online and validated, user access continues.

If a rollback is initiated later in the deployment window, restoration time may exceed the planned downtime for deployment. This risk is mitigated by scheduling deployments for weekends and other times when expected usage levels are low.

## Authority for Rollback

If a rollback is necessary, approval for the rollback comes from the current VA PM.

## Rollback Procedures

Perform the following steps to uninstall the newly deployed CV components and restore the previous installation.

A detailed list of the servers referenced in the installation verification procedures can be found in the REDACTED. See [Purpose](#_Purpose) for the link to the repository.

1. Roll back jMeadowsCCP
	1. SSH in to the jMeadows server
	2. Log in to WebLogic Admin console on the jMeadows server
	3. Undeploy the CVjMeadowsCCP-3.6.0.0.0-production.war build; WebLogic also undeploys the build from the clustered server(s)
	4. Deploy CVjMeadowsCCP-3.5.0.0.0-production.war build located in the *Builds* directory /u01/CV\_HOME/builds to the targeted cluster
	5. Start the application
	6. Validate all external endpoint web services are available by testing connectivity through a curl command on the jMeadows servers: REDACTED.
2. Roll back the CV application for CCP users
	1. SSH into the Web server
	2. Log into WebLogic Admin console on the Web server
	3. Undeploy the CV-CCP-3.6.0.0.0-production.war build; WebLogic also undeploys it from the clustered server(s)
	4. Deploy CCV-CCP-3.5.0.0.0-production.war build located in the *Builds* directory /u01/CV\_HOME/builds to the targeted cluster.
	5. Start the application
	6. Validate that the CV web portal is available by testing connectivity through a web browser, outside of the CV servers, using the public URL
3. Roll back VDS
	1. SSH in to the VDS server
	2. Log in to the WebLogic Admin console on the VDS server
	3. Undeploy the CVVistaDataService-3.6.0.0.0-production.war build; WebLogic also undeploys the build from the clustered server(s)
	4. Deploy CVVistaDataService-3.5.0.0.0-production.war build located in the *Builds* directory /u01/CV\_HOME/builds to the targeted cluster
	5. Start the application
	6. Validate that the following external endpoint web service is available by testing connectivity using curl on the VDS servers: REDACTED.
4. Roll back Report Builder
	1. SSH in to the jMeadows server
	2. Log in to the WebLogic Admin console on the jMeadows server
	3. Undeploy the *reportbuilder-3.6.0.0.0-production.jar;* WebLogic also undeploys the build from the build from the clustered server(s)
	4. Deploy *reportbuilder-3.5.0.0.0-production.jar* build located in the *Builds* directory /u01/CV\_HOME/builds to the targeted cluster
	5. Start the application

## Rollback Verification Procedures

After completing the rollback procedures, perform the validation steps in [Installation Verification Procedures](#_Installation_Verification_Procedure). If all else fails, restore the servers from VM snapshots taken prior to the upgrade.

1. Acronyms and Abbreviations

Table 8 lists the acronyms and abbreviations used throughout this document.

Table 8: Acronyms and Abbreviations

| Acronym | Definition |
| --- | --- |
| AITC | Austin Information Technology Center |
| ATO | Authority to Operate |
| CA | Computer Associates |
| CCP | Community Care Provider |
| CD2 | Critical Decision Point 2 |
| CHDR | Clinical/Health Data Repository |
| CHG | Change Order |
| COR | Contracting Officer’s Representative |
| CV | Community Viewer |
| CVIX | Central VistA Imaging Exchange |
| DB | Database |
| DIBR | Deployment, Installation, Backout, and Rollback |
| EP | Elevated Privilege |
| ePAS | Electronic Permission Access System |
| EPMO | Enterprise Program Management Office |
| FEHR | Federal Electronic Health Record |
| FHIR | Fast Healthcare Interoperability Resources |
| FQDN | Fully Qualified Domain Name |
| GB | Gigabyte |
| GTM | Global Traffic Manager |
| HSTS | HTTP Strict Transport Security  |
| IAM | Identity and Access Management |
| IO | Infrastructure Operations |
| IT | Information Technology |
| JLV | Joint Legacy Viewer |
| LTM | Local Traffic Manager |
| MHS | Military Health System |
| MPI | Master Person Index |
| MS | Microsoft |
| OIT | Office of Information and Technology |
| PCMM | Patient-Centered Management Module |
| PITC | Philadelphia Information Technology Center |
| PM | Program Manager or Project Manager |
| POC | Point of Contact |
| POM | Production Operations Manual |
| PPMS | Provider Profile Management System |
| QoS | Quality of Service |
| RAM | Random Access Memory |
| RRR | Release Readiness Report |
| SDE | Service Delivery Engineering |
| SMS | Systems Made Simple |
| SMTP | Simple Mail Transfer Protocol |
| SNOW | Service Now |
| SQL | Structured Query Language |
| SSH | Secure Shell |
| SSMS | SQL Server Management Studio |
| UAT | User Acceptance Testing |
| VA | Department of Veterans Affairs |
| VAS | VA Administrative Staff |
| VDS | VistA Data Service |
| VIP | Veteran-focused Integrated Process |
| VistA | Veterans Information Systems and Technology Architecture |
| VM | Virtual Machine |
| WSDL | Web Service Description Language |

1. Central VistA Imaging Exchange (CVIX), Global Traffic Manager (GTM), Local Traffic Manager (LTM), Master Person Index (MPI), Patient-Centered Management Module (PCMM), Provider Profile Management System (PPMS), Quality of Service (QoS), Simple Mail Transfer Protocol (SMTP), VistA Data Service (VDS) [↑](#footnote-ref-2)