Decision Support System
Deployment, Installation, Back-Out, and Rollback Guide

October 2021

Patch ECX*3.0*181

Software Version 3.0

Department of Veterans Affairs
Office of Information and Technology

Revision History

Date	Version	Description	Author
04/2021	1.1	DSS FY22 ECX*3.0*181 Modified in accordance with the *OIT End-User Documentation* Standards	LibertyIT Solutions
04/2020	1.0	DSS FY21 ECX*3.0*178 Initial Document Release	LibertyIT Solutions

Artifact Rationale

This document describes the Deployment, Installation, Back-out, and Rollback Plan for new products going into the VA Enterprise. The plan 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 should be structured appropriately, to reflect particulars of these procedures at a single or at multiple locations.

Per the *Veteran-focused Integrated Process* (VIP) *Guide*, the *Deployment, Installation, Back-out, and Rollback Guide* (DIBRG) is required to be completed prior to Critical Decision Point #2 (CD #2), with the expectation that it will be updated throughout the lifecycle of the project for each build, as needed.

Table of Contents

List of Tables

1 Introduction

This document describes how to deploy and install the Decision Support System (DSS) ECX*3.0*181 patch, as well as how to back-out the product and rollback to a previous version or data set. This document is a companion to the project charter and management plan for this effort.

The entry for ECX*3.0*181 in the National Patch Module (NPM) on FORUM provides detailed instructions for the installation of this patch. A copy of these instructions is distributed to sites in the PackMan e-mail message along with the software. This current document details the criteria for determining if a back-out is necessary, the authority for making that decision, the order in which installed components will be backed out, the risks and criteria for a rollback, and authority for acceptance or rejection of the risks.

1.1 Purpose

The purpose of this plan is to provide a single, common document that describes how, when, where, and to whom the DSS Fiscal Year (FY) 22 Patch (ECX*3.0*181) will be deployed and installed, as well as how it is to be backed out and rolled back, if necessary. The plan also identifies resources, a communications plan, and the rollout schedule. Specific instructions for installation, back-out, and rollback are included in this document.

The intended audience includes Technical Services, National Veterans Health Information Systems and Technology Architecture (VistA) Support and Software Quality Assurance (SQA).

1.2 Dependencies

There are no new dependencies beyond those covered under separate topics within this document that are being introduced in this version of the DSS application.

1.3 Constraints

DSS FY22 has the following constraints:

- Data is available from other packages
- Austin Information Technology Center (AITC) is ready and available to accept extract documents

2 Roles and Responsibilities

Table 1 identifies, at a high-level, the parties responsible for supporting VistA patches.

Table 1: DIBRG Roles and Responsibilities

Team	Phase / Role	Tasks	Project Phase
VA Office of Information and Technology (OIT), VA OIT Health Product Support & Project Management Office (PMO)	Deployment	Plan and schedule deployment (including orchestration with vendors)	Planning
Local Individual Veterans Administration Medical Center (VAMC)	Deployment	Determine and document the roles and responsibilities of those involved in the deployment.	Planning
Field Testing (Initial Operating Capability – (IOC)), Health Product Support Testing & VIP Release Agent Approval	Deployment	Test for operational readiness	Testing
Health Product Support (HPS) and Field Operations	Deployment	Execute deployment	Deployment
VIP Release Agent	Installation	Plan and schedule installation Obtain authority to operate, and that certificate authority security documentation is in place.	Deployment
Managerial Cost Accounting Office (MCAO) DSS Team	Installations	Coordinate knowledge transfer with the team responsible for user training.	Deployment
VIP release Agent, Health Product Support & the DSS development team	Back-out	Confirm availability of back-out instructions and back-out strategy (what are the criteria that trigger a back-out)	Deployment
DSS Team	Post Deployment	Hardware, Software and System Support	Warranty

3 Deployment

Site deployment is divided into three distinct phases:

1. Pre-Installation/Initial Site Setup
2. Pre-Production/Test Environment Installation
3. Production Environment Installation

Section 4 details the required steps each IOC site must perform to successfully install ECX*3.0*181.

3.1 Timeline

Patch ECX*3.0*181 is scheduled to be installed and deployed in the IOC site production environments. During this time, the testers will perform production testing and the ESL OIT personnel will verify the installation to ensure there are no errors.

3.2 Site Readiness Assessment

Per the Veteran-Focused Integration Process (VIP) guidelines, a Critical Decision (CD) 2 event will be conducted to review the patch and its readiness for release into the IOC production environment. Upon approval from DSS leadership, the patch will proceed to IOC production testing. Upon successful production testing, the patch is ready for National Release.

The Patch will be released by VA HSP, and the Patch Development Team will upload all relevant patch documentation to the VA Software Documentation Library (VDL).

The Patch Development Team will provide support to VA HSP.

Before installing DSS extract updates, verify with the local DSS Site Manager that extraction and transmission of FY21 data has been completed. Revisions to data dictionaries and routines made during this installation will make it impossible to perform any further FY21 data extracts.

3.2.1 Deployment Topology (Targeted Architecture)

ECX*3.0*181, a patch to the VistA DSS Extracts package, is installable on a fully patched Massachusetts General Hospital Utility Multi-Programming System (MUMPS) VistA system and operates on top of the VistA environment provided by the VistA infrastructure packages. The latter provides utilities which communicate with the underlying operating system and hardware, thereby providing DSS independence from variations in hardware and operating system.

3.2.2 Site Information (Locations, Deployment Recipients)

DSS FY22 Patch ECX*3.0*181 will be deployed enterprise-wide.

3.2.3 Site Preparation

No additional site preparation activities are required. The DSS FY22 patch will run under current site configuration.

3.3   Resources

This section describes the relevant hardware, software, facilities, and documentation for DSS FY22 Patch ECX*3.0*181 deployment.

3.3.1   Hardware

No new hardware or other resources are required.

3.3.2   Software

Table 2 describes the minimum version for VistA infrastructure software applications for installation and normal operation. The following package versions (or higher) must be installed prior to loading this patch:

Table 2: External Package Minimum Versions Required

Software Product Name	Acronym	Minimum Version Required
Admission Discharge Transfer	ADT	5.3
Bar Code Medication Administration	BCMA	3.0
DSS Extracts	ECX	3.0
Event Capture	EC	EC*2.0*152 (Only required if EC is in use)
FileMan	FM	22.2
Health Level Seven	HL7	1.6
Kernel	XU	8.0
Laboratory	LR	5.2
Lab: Blood Bank	LBB	5.2
MailMan	XM	8.0
Mental Health	MH	5.01
Order Entry/Results Reporting	OE/RR	3.0
Patient Care Encounter	PCE	1.0
Pharmacy: Data Management	PDM	1.0
Pharmacy: Inpatient Medications	PSJ	5.0
Pharmacy: National Drug File	NDF	4.0
Pharmacy: Outpatient Pharmacy	PSO	7.0
Prosthetics	PRO	3.0
Radiology	RAD	5.0
Registration Package	DG	5.3
Scheduling	SD	5.3
Surgery	SR	3.0

3.3.3 Communications

Field offices will report any installation errors or problems to the HSP Application Coordinator. During the installation compliance window, the deployment status will be monitored and reviewed weekly via the VA's enterprise release calendar review.

3.3.3.1 Deployment/Installation/Back-Out Checklist

The Release Management team will deploy the patch ECX*3.0*181, which is tracked nationally for all VAMCs in the National Patch Module (NPM) in FORUM.

FORUM automatically tracks the patches as they are installed in the different VAMC production systems. A report can be run in FORUM to identify when the patch was installed in the VistA production at each site. A report can also be run to identify which sites have not currently installed the patch in their VistA production system. Therefore, this information does not need to be manually tracked in Table 3.

Table 3: Deployment/Installation/Back-Out Checklist

Activity	Day	Time	Individual who completes task
Deploy	N/A	N/A	N/A
Install	N/A	N/A	N/A
Back-Out	N/A	N/A	N/A

4 Installation

ECX*3.0*181, a patch to the VistA DSS Extracts package, is installable on a fully-patched MUMPS VistA system and operates on top of the VistA environment provided by the VistA infrastructure packages. The latter provides utilities which communicate with the underlying operating system and hardware, thereby providing DSS Extracts independence from variations in hardware and operating system.

4.1   Pre-Installation and System Requirements

Before installing DSS extract updates, verify with the local DSS Site Manager that extraction and transmission of FY21 data has been completed. Revisions to data dictionaries and routines made during this installation will make it impossible to perform any further FY21 data extracts.

Any extract process that may have been tasked to run should be unscheduled before beginning the installation.

4.2   Platform Installation and Preparation

As best practice, sites must install the software in test/pre-prod accounts prior to installing in production accounts.

If installed during the normal workday, it is recommended that the Extract Manager's Options [ECXMGR] in the OPTION file (#19) and all of its descendants be disabled to prevent possible conflicts while running the Kernel Installation and Distribution System (KIDS) installation. Other VistA users will not be affected, and the installation time is estimated to be five minutes.

4.3   Download and Extract Files

ECX*3.0*181 is provided to IOC sites as a KIDS build via FORUM. Refer to the ECX*3.0*181 patch documentation in the NPM.

4.4   Database Creation

The patch is applied to an existing MUMPS VistA database. No other database creation is required.

4.5   Installation Scripts

Installation scripts are not needed to install the software. For detailed steps to install the software, refer to Section 4.8 in this document or the ECX*3.0*181 patch description in the NPM.

4.6   Cron Scripts

There are no Cron scripts associated with DSS or its installation.

4.7 Access Requirements and Skills Needed for the Installation

Account Access Requirements for Installation:

- Access: Programmer @ sign to ensure all programmer access at the sites
- MailMan access

Skill level requirements for installation:

- Knowledge of roll and scroll navigation and commands to support install
- Knowledge and ability to verify checksums
- Knowledge and ability to back up global
- Knowledge and ability to check error traps
- Knowledge and ability to troubleshoot installation issues

Instructions on how to perform these installation functions are included in this installation guide, as well as in the formal NPM Patch Description that is sent to site/regional personnel prior to the installation.

4.8 Installation Procedure

The subsections below describe the steps for installing ECX*3.0*181.

4.8.1 Load Transport Global

Choose the PackMan message containing the ECX*3.0*181 patch and invoke the INSTALL/CHECK MESSAGE PackMan option.

4.8.2 Server Installation

1. Use the INSTALL/CHECK MESSAGE option on the PackMan menu to unload the KIDS distribution included with this message.
2. From the KIDS Menu, select the Installation menu.
3. The following steps are optional but are recommended. When prompted for INSTALL NAME, enter **ECX*3.0*181**:
   a) Backup a Transport Global — This option will create a backup message of any routines exported with the patch. It will NOT backup any other changes such as Data Dictionaries (DD) or templates.
   b) Compare Transport Global to Current System — This option allows you to view all changes that will be made when this patch is installed. It compares all components of this patch (routines, DDs, templates, etc.).
   c) Verify Checksums in Transport Global — This option allows you to ensure the integrity of the routines that are in the transport global.
   d) Print Transport Global — This option allows you to view the components of the KIDS build.
4. Use the Install Package(s) option and select the package **ECX*3.0*181**.

5. If prompted 'Want KIDS to Rebuild Menu Trees Upon Completion of Install? NO//' Answer **NO**.

6. When prompted 'Want KIDS to INHIBIT LOGONs during the install? NO//' answer **NO**.

7. When prompted 'Want to DISABLE Scheduled Options, Menu Options, and Protocols? NO//' answer **YES**.

8. When prompted 'Enter options you wish to mark as 'Out of Order:', enter the following options: Extract Manager's Options [ECXMGR].

9. When prompted 'Enter protocols you wish to mark as 'Out of Order':', press <**Enter**>.

10. If prompted 'Delay Install (Minutes): (0–60): 0//', answer 0 (unless otherwise indicated).

4.8.3   KIDS Installation Example

```
Select INSTALL NAME: ECX*3.0*181       5/10/21@15:09:01
     => ECX*3*181 TEST v1

This Distribution was loaded on May 10, 2021@15:09:01 with header of
  ECX*3*181 TEST v1
  It consisted of the following Install(s):
   ECX*3.0*181
Checking Install for Package ECX*3.0*181

Install Questions for ECX*3.0*181

Incoming Files:

  727.802   ADMISSION EXTRACT  (Partial Definition)
Note:  You already have the 'ADMISSION EXTRACT' File.

  727.808   PHYSICAL MOVEMENT EXTRACT  (Partial Definition)
Note:  You already have the 'PHYSICAL MOVEMENT EXTRACT' File.

  727.809   UNIT DOSE LOCAL EXTRACT  (Partial Definition)
Note:  You already have the 'UNIT DOSE LOCAL EXTRACT' File.

  727.81    PRESCRIPTION EXTRACT  (Partial Definition)
Note:  You already have the 'PRESCRIPTION EXTRACT' File.

  727.811   SURGERY EXTRACT  (Partial Definition)
Note:  You already have the 'SURGERY EXTRACT' File.

  727.813   LABORATORY EXTRACT  (Partial Definition)
Note:  You already have the 'LABORATORY EXTRACT' File.

  727.814   RADIOLOGY EXTRACT  (Partial Definition)
Note:  You already have the 'RADIOLOGY EXTRACT' File.

  727.815   EVENT CAPTURE LOCAL EXTRACT  (Partial Definition)
Note:  You already have the 'EVENT CAPTURE LOCAL EXTRACT' File.

  727.817   TREATING SPECIALTY CHANGE EXTRACT  (Partial Definition)
Note:  You already have the 'TREATING SPECIALTY CHANGE EXTRACT' File.
```

```
     727.819   IV DETAIL EXTRACT   (Partial Definition)
Note:  You already have the 'IV DETAIL EXTRACT' File.

     727.826   PROSTHETICS EXTRACT   (Partial Definition)
Note:  You already have the 'PROSTHETICS EXTRACT' File.

     727.827   CLINIC EXTRACT   (Partial Definition)
Note:  You already have the 'CLINIC EXTRACT' File.

     727.833   BCMA EXTRACT   (Partial Definition)
Note:  You already have the 'BCMA EXTRACT' File.

Want KIDS to Rebuild Menu Trees Upon Completion of Install? NO//

Want KIDS to INHIBIT LOGONs during the install? NO//
Want to DISABLE Scheduled Options, Menu Options, and Protocols? YES//

Enter options you wish to mark as 'Out Of Order': ECXMGR   Extract
     Manager's Options

Enter protocols you wish to mark as 'Out Of Order':

Delay Install (Minutes):  (0-60): 0//

Enter the Device you want to print the Install messages.
You can queue the install by enter a 'Q' at the device prompt.
Enter a '^' to abort the install.

DEVICE: HOME// 0;132;9999  HOME  (CRT)

                              ECX*3.0*181
_____
     ECX819
     ECX8191
     ECX8192
     ECX826
     ECX8261
     ECX8262
     ECX827
     ECX8271
     ECX8272

 Updating KIDS files...

 ECX*3.0*181 Installed.
             May 10, 2021@15:16:53

 Not a production UCI

 NO Install Message sent
_____

   100%          ┌─────────25──────────50──────────75──────────┐
Complete         └─────────────────────────────────────────────┘

Install Completed
```

4.9   Installation Verification Procedure

The Application Coordinator is responsible for coordinating the activities for the national release of the product or patch, representing HSP as a member of the project team for the product or patch release. This includes working with the appropriate Sustainment Manager (SM) to ensure a smooth and successful transition of the product from development to sustainment.

Table 4 lists the release deployment Point of Contact (POC) information for DSS FY22.

Table 4: Release Deployment POC Information

Release Identification	Release Package POC	Release Package POC Email
ECX*3.0*181	HSP Application Coordinator	REDACTED

The POC for each process will verify that all required inputs are available. Upon completion of each sub-task in the execution, the POC will verify that all required outputs have been generated and all the necessary exit criteria have been met.

The master process is not considered complete until all related sub-tasks for the perceived entry criteria have been completed. Verification and validation are performed to ensure that the processes executed meet the needs of the development effort and the execution of this process satisfies the certification requirements of the organization requesting the activity.

4.10   System Configuration

No system configuration changes are required.

4.11   Database Tuning

No reconfiguration of the VistA database, memory allocation, or other resources are necessary for DSS Patch ECX*3.0*181.

5 Back-Out Procedure

ESL OIT personnel perform backups on routines prior to patch installation. If for any reason a need arises, ESL OIT personnel will back out the patch and revert to the previous backup point to restore their respective environments. Any changes that need to be reapplied to the database will be manually applied. It may be necessary for the developer to be given access to the site to assist with these procedures.

5.1   Back-Out Strategy

In the event that the ECX*3.0*181 patch needs to be backed out, the development team will assist the site with removing the VistA routines as needed.

5.2   Back-Out Considerations

Back-out considerations would include the following:

- Health of site systems
- Ability to recover to a stable environment
- Minimal disruption to a site
- Minimize issues within the VistA host

5.2.1   Load Testing

Load Testing is not applicable. The back-out process for patch ECX*3.0*181 would be executed at a normal, rather than raised job priority, and expected to have minimal effect on total system performance. To minimize potential impact on users, implementation of a back-out can be queued to run during hours of reduced user activity. After the reversion, the performance demands on the system would be unchanged.

5.2.2   User Acceptance Testing

It is expected that the restoration of the pre-ECX*3.0*181 version of routines could be confirmed by OIT Support quickly by using utility CHECK1^XTSUMBLD, which returns the checksum or routine comparison utilities from VA Kernel without any need of User Acceptance Testing (UAT).

5.3   Back-Out Criteria

A back-out of the software should only be performed in response to severe system impairment, and when no other option available.

LibertyITS will analyze the issue and related system functionality impairment. Based on the severity of the condition, a determination will be made if a back-out of the software is required.

5.4   Back-Out Risks

Risks for a back-out include:

- Further corruption of system
- Inability to completely remove all software code from system
- Loss of system functionality while back-out is in progress
- Loss of data; some records may never be recovered

5.5   Authority for Back-Out

The order would come from the Portfolio Director, the VA Project Manager, and the Business Owner. Health Product Support (HPS) will work to identify the problem and assist with implementation. This should be done in consultation with the development team and project stakeholders.

5.6   Back-Out Procedure

ESL OIT personnel perform backups on routines prior to patch installation. If, for any reason a need arises, ESL OIT personnel will back out the patch and revert to the previous backup point to restore their respective environments. Any changes that need to be reapplied to the database will be manually applied. It may be necessary for the developer to be given access to the site to assist with these procedures.

5.7   Back-Out Verification Procedure

It is expected that the restoration of the pre-ECX*3.0*181 version of routines could be confirmed by OIT Support quickly by using utility CHECK1^XTSUMBLD, which returns the checksum or routine comparison utilities from VA Kernel. Manually check database changes to verify that files are in their previous state.

6 Rollback Procedure

The Rollback Procedure pertains to data. DSS does not roll back to the previous state of the data and/or platform settings.

6.1   Rollback Considerations

N/A

6.2   Rollback Criteria

N/A

6.3   Rollback Risks

N/A

6.4   Authority for Rollback

N/A

6.5   Rollback Procedure

N/A

6.6   Rollback Verification Procedure

N/A

Appendix A   Acronyms

Table 5 lists the acronyms utilized throughout the DSS FY22 Deployment, Installation, Back-Out and Rollback Guide.

Table 5: Acronym Table

Acronym	Description
ADT	Admission Discharge Transfer
BCMA	Bar Code Medication Administration
DD	Data Dictionary
DG	Registration Package
DSS	Decision Support System
EC	Event Capture
ECS	Event Capture System
ESL	Enterprise Service Line
FM	FileMan
FY	Fiscal Year
HL7	Health Level Seven
HPS	Health Product Support
HSP	Heath Services Portfolio
IOC	Initial Operating Capability
IT	Information Technology
KIDS	Kernel Installation and Distribution System
LBB	Lab: Blood Bank
LR	Laboratory
MCA	Managerial Cost Accounting
MCAO	Managerial Cost Accounting Office
MH	Mental Health
MUMPS	Massachusetts General Hospital Utility Multi-Programming System
NDF	National Drug File
NPM	National Patch Module
OE/RR	Order Entry/Results Reporting
OIT	Office of Information and Technology
PCE	Patient Care Encounter
PDM	Pharmacy: Data Management
POC	Point of Contact
PRO	Prosthetics
PSJ	Pharmacy: Inpatient Medications

Acronym	Description
PSO	Pharmacy: Outpatient Pharmacy
RAD	Radiology
SD	Scheduling
SM	Sustainment Manager
SQA	Software Quality Assurance
SR	Surgery
UAT	User Acceptance Testing
VA	Department of Veterans Affairs
VIP	Veteran-focused Integration Process
VistA	Veterans Health Information Systems and Technology Architecture
XM	Mailman
XU	Kernel