

**Decision Support System 3.0**  
**Deployment, Installation, Back-out, and Rollback Guide**



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## Revision History

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| 12/2022 | 1.2     | <b>Updated for patch ECX*3.0*185</b><br>Updated 4.8.3 KIDS Install example  | Booz Allen Hamilton  |
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| 04/2021 | 1.1     | <b>Updated for DSS FY22 ECX*3.0*181</b><br>Modified in accordance with the <i>OIT End-User Documentation Standards</i>  | Liberty IT Solutions |
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## 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.

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# 1 Introduction

The *Deployment, Installation, Back-out, and Rollback Guide* (DIBRG) describes how to deploy and install the Decision Support System (DSS) ECX\*3.0\*185 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\*185 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 2023 (FY23) Patch ECX\*3.0\*185 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 FY23 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<br>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 and 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\*185.

### 3.1 Timeline

Patch ECX\*3.0\*185 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 Health Product Support (HPS), 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 HPS.

Before installing DSS extract updates, verify with the local DSS Site Manager that extraction and transmission of FY22 data has been completed. Revisions to data dictionaries and routines made during this installation will make it impossible to perform any further FY22 data extracts.

#### 3.2.1 Deployment Topology (Targeted Architecture)

ECX\*3.0\*185, 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 FY23 Patch ECX\*3.0\*185 will be deployed enterprise-wide.

#### 3.2.3 Site Preparation

No additional site preparation activities are required. The DSS FY23 patch will run under current site configuration.

### 3.3 Resources

This section describes the relevant hardware, software, facilities, and documentation for DSS FY23 Patch ECX\*3.0\*185 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**

| <b>Software Product Name</b>       | <b>Acronym</b> | <b>Minimum Version Required</b>               |
|------------------------------------|----------------|---|
| Admission Discharge Transfer       | ADT            | 5.3   |
| Bar Code Medication Administration | BCMA           | 3.0   |
| DSS Extracts                       | ECX            | 3.0   |
| Event Capture                      | EC             | EC*2.0*156<br>(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 HPS 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\*185, 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 this document.

## 4 Installation

ECX\*3.0\*185, 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 FY22 data has been completed. Revisions to data dictionaries and routines made during this installation will make it impossible to perform any further FY22 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\*185 is provided to IOC sites as a KIDS build via FORUM. Refer to the ECX\*3.0\*185 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\*185 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\*185.

### 4.8.1 Load Transport Global

Choose the PackMan message containing the ECX\*3.0\*185 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\*185**:
  - 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\*185**.
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 Installation <TEST ACCOUNT> Option: 6  Install Package(s)
Select INSTALL NAME: ECX*3.0*185          12/2/22@11:27:23
      => ECX*3*185 TEST v1

This Distribution was loaded on Dec 02, 2022@11:27:23 with header of
ECX*3*185 TEST v1
It consisted of the following Install(s):
ECX*3.0*185
Checking Install for Package ECX*3.0*185

Install Questions for ECX*3.0*185

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 options you wish to mark as 'Out Of Order':

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// ;132;999 UCX/TELNET

Install Started for ECX*3.0*185 :
      Dec 02, 2022@11:36:20

Build Distribution Date: Dec 01, 2022

Installing Routines:
      Dec 02, 2022@11:36:20

Installing PACKAGE COMPONENTS:

```

```

Installing SECURITY KEY
      Dec 02, 2022@11:36:20

Updating Routine file...

Updating KIDS files...

ECX*3.0*185 Installed.
      Dec 02, 2022@11:36:20

Not a production UCI

Install Completed

```

## 4.9 Installation Verification Procedure

The Application Coordinator (AC) is responsible for coordinating the activities for the national release of the product or patch, representing HPS 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 3 lists the release deployment Point of Contact (POC) information for DSS FY23.

**Table 3: Release Deployment POC Information**

| Release Identification | Release Package POC         | Release Package POC Email |
|------------------------|-----------------------------|---------------------------|
| ECX*3.0*185            | HPS 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\*185.

## 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\*185 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\*185 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\*185 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.

Booz Allen Hamilton (BAH) team members 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\*185 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 4 lists the acronyms utilized throughout the DSS FY23 Deployment, Installation, Back-Out and Rollback Guide.

**Table 4: Acronym Table**

| Acronym | Description   |
|---------|---|
| AC      | Application Coordinator   |
| 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  |
| 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  |

| <b>Acronym</b> | <b>Description</b>  |
|----------------|---|
| PRO            | Prosthetics   |
| PSJ            | Pharmacy: Inpatient Medications                                 |
| 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  |