INTERSYSTEMS LEARNING SERVICES

InterSystems Change Control

InterSystems
Creative data technology

InterSystems Change Control

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ICC 200: Introduction to CCR

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Overview

- What is CCR?
- What is Perforce?
- Environments and Systems.
- Basic navigation within CCR.
- CCR Transport Basics.
- CCR Tiers.
- CCR workflow vocabulary.
- Little and often principle.
- Resources.

Objectives

- Explain what the CCR application is and why it’s important.
- Describe why CCR uses Perforce.
- Describe the following terms.
  - CCR Tier 0, 1, and 2.
  - CCR Systems and environments.
  - CCR Transport.
- Define the concept of little and often.
- Access the CCR online application and perform basic navigation.
- Access additional resources for learning and questions.

Change Control Record Application (CCR)

- Custom workflow application built on InterSystems IRIS.
  - Application centrally hosted by InterSystems.
- Manages documentation, versioning, and flow of changes to application implementations.
  - Change = anything that could impact application functionality.
- "CCR" refers to application and individual change records.
- Many workflow options.
- Robust security model.
  - Only InterSystems employees can view records and code from other organizations.

Perforce Helix

- Commercial Version Control System (VCS).
  - Database for flat file items.
    - Central storage for code and configuration.
  - Provides full versioning capabilities.
- CCR uses Perforce to:
  - Version exportable changes (code and configuration).
  - Automate merging of changes through workflow.
  - Complete copy of code in Environment.
- Customers using CCR receive Perforce licenses.
  - Only able to access Perforce through CCR application.

CCR Functionality

- Allow thorough documentation.
  - Fields for user to complete and automatically generated audit trails.
- Interact with Perforce on behalf of user.
- Facilitate movement of changes between Perforce and environments.
- Provide formal and recorded peer review.
- Provide formal and recorded authorization to move changes.

CCR Scope of Use

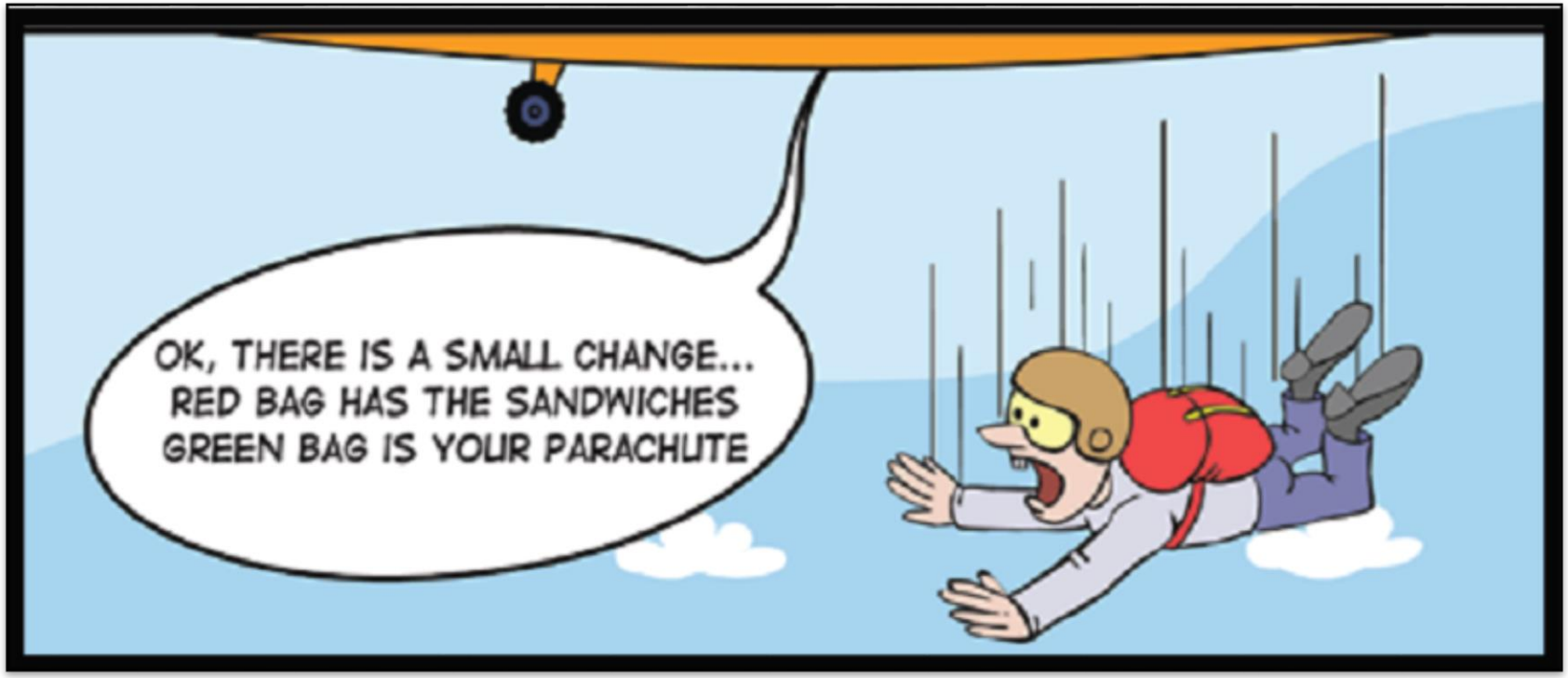
- Can be used in any phase of project.
  - Early development with one environment to multi-environment workflow for business as usual changes.
- Users include anyone making, managing, or searching for changes made to an implementation.
  - Developers, project managers, support personnel.
- Organizations that use CCR include:
  - InterSystems.
  - Implementation partners / third party consultants.
  - End user customers.

CCR First Principles and Benefits of Using CCR

- CCR First Principles guide functionality and benefits of CCR.
  - Repeatable.
    - Identify how to replicate changes in a new environment.
    - Catch missed implications and verify best practices followed.
    - Prevent unauthorized changes.
  - Revertible.
    - Ensure implementation of change allows for change to be undone.
  - Discoverable.
    - Identify recent changes during crisis.
- CCR functionality enables these 3 principles.

Small Change ≠ Small Risk

- All changes should go through CCR process.
  - Including those involving non-exportable items.



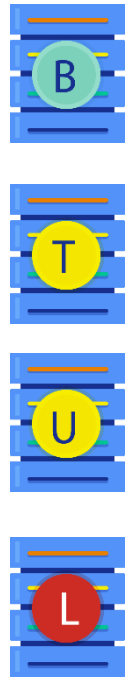
Part 1: CCR Environments and Systems

CCR Environment

- Hardware and software that provides standalone copy of functionality for an application.
- Example: one namespace of IRIS for Health with application code and configuration, on server running Red Hat.

4 Possible Primary CCR Environments

- BASE.
  - Initial environment where all changes originate.
    - Exception: LIVE-only Systems.
- TEST.
  - Testing environment for validation.
- UAT.
  - Secondary testing environment.
- LIVE.
  - Production environment.

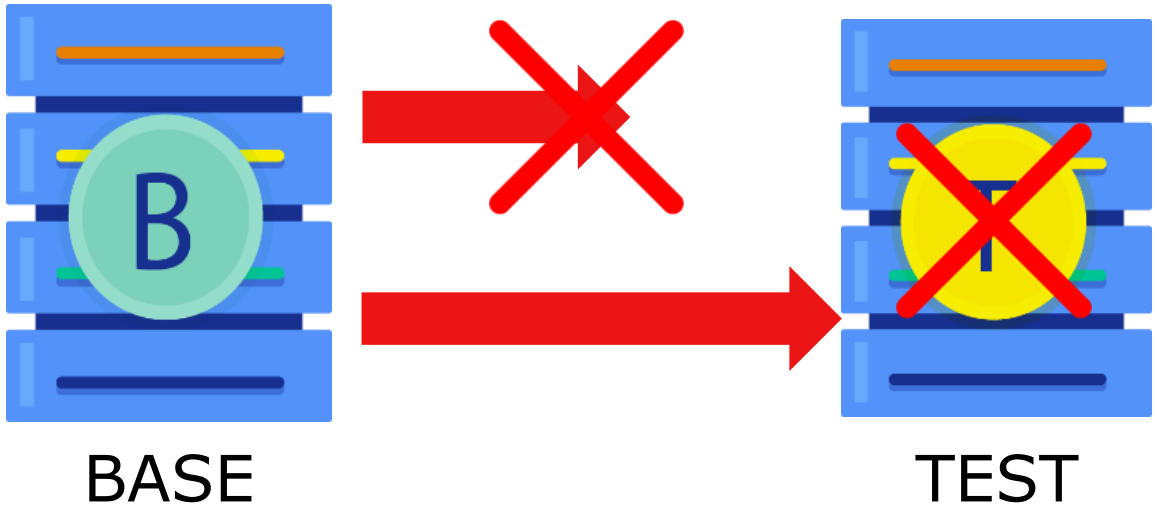


Possible Environments in System

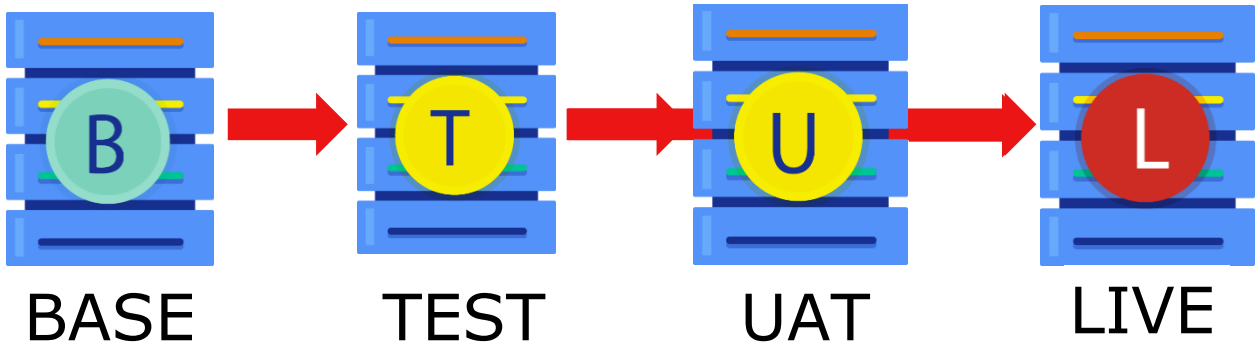
- 1 environment:
  - BASE or LIVE only.
- 2+ environments:
  - 1 must be BASE.
- Most common to have BASE, TEST, and LIVE.
- Non-BASE environments in multi-environment workflows:
  - Locked from manual changes outside CCR process.
  - Require customer authorization to receive changes.

Why multiple environments?

- Process of moving changes is tested.
  - Moving a change can fail.
- Functionality tested.
  - Isolating changed items helps verify functionality.
  - The change can fail to meet requirements or specifications.

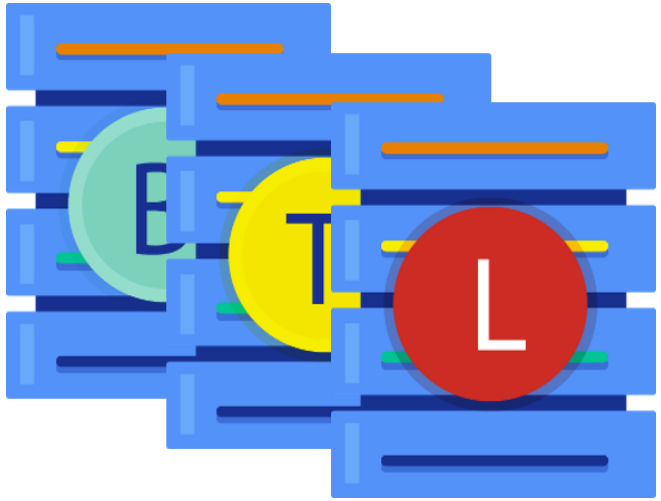


Change Flow through Environments



CCR System

- All environments included in workflow for particular application.
- Systems can be defined to have 1, 2, 3 or 4 Primary Environments.



Quiz: CCR Environments

Question:

What are the three most common CCR Primary Environments called?

A. SCRATCH.

B. BASE.

C. TEST.

D. TRAIN.

E. UAT.

F. LIVE.

Quiz: CCR Environment Usage

Question:

In which CCR environment must all changes originate if there are 3 environments in the System?

A. TEST.

B. BASE.

C. LIVE.

Answer:

B. BASE. All changes take place in BASE first prior to being moved to other environments in the CCR System.

Part 2: Introduction to CCR Application

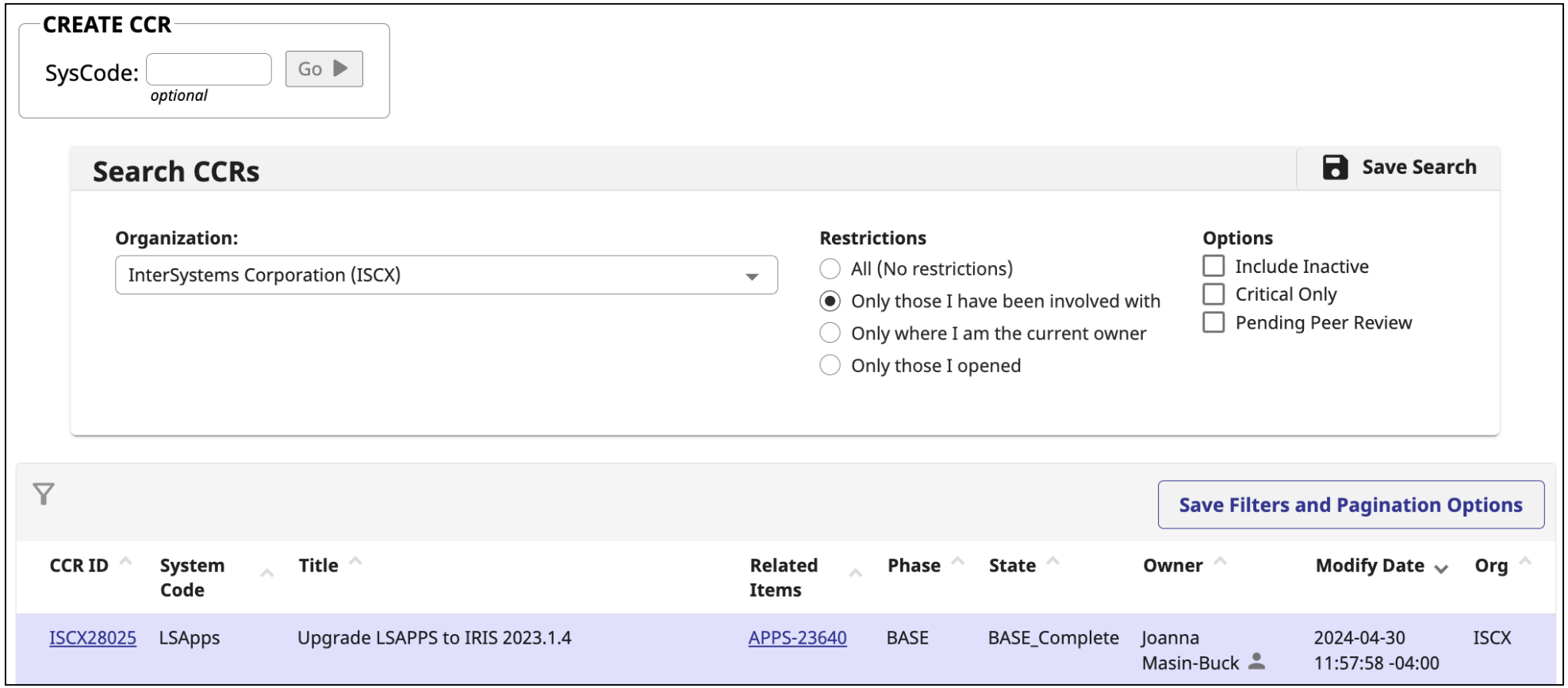
Log In

- ccr.intersystems.com.
- Use InterSystems SSO credentials to login.
  - Same as iService and learning.intersystems.com.

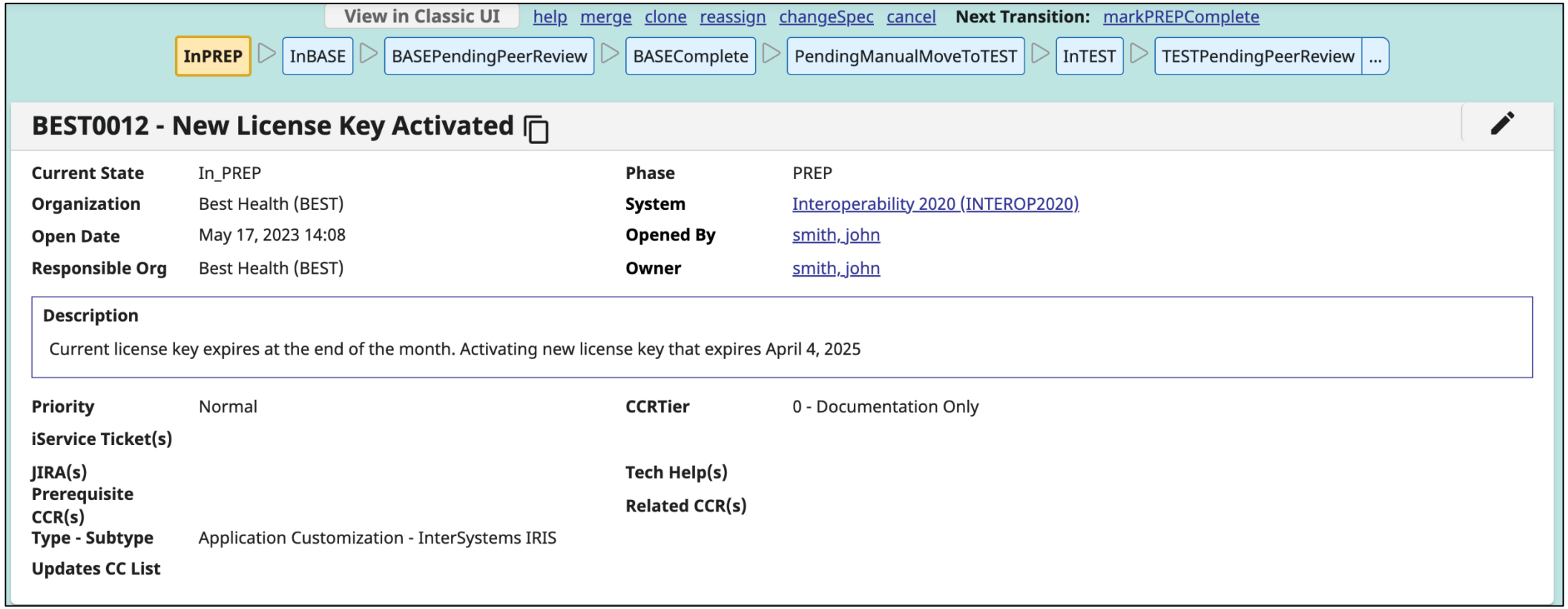
Demo

- Home page.
- Side navigation.
- System Details export.

CCR Home Page



CCR Record

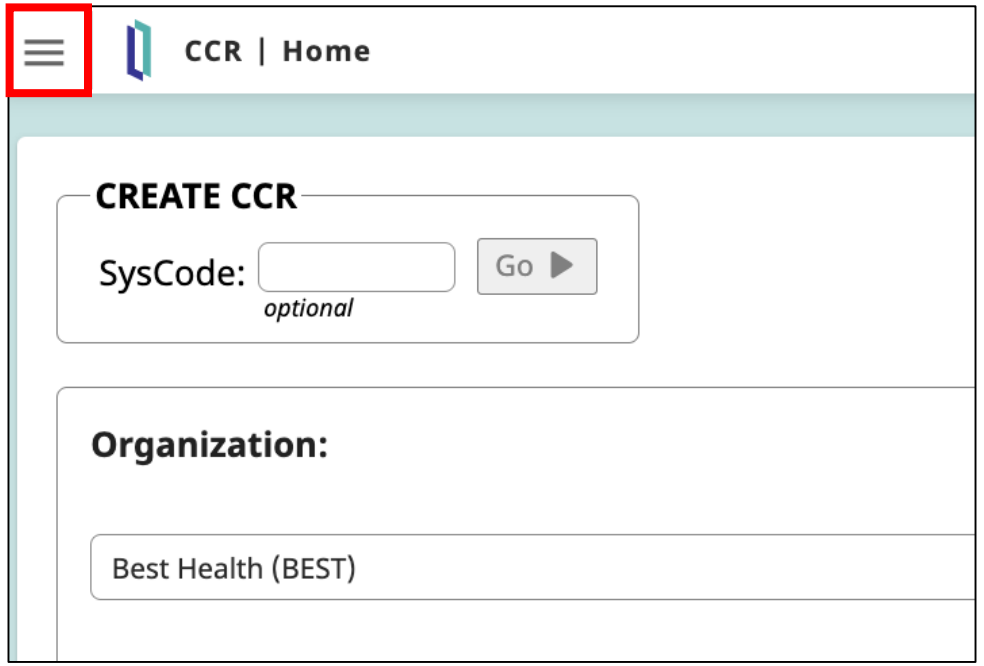

View in Classic UI
help
merge
clone
reassign
changeSpec
cancel
Next Transition:
markPREPComplete
InPREP
InBASE
BASEPendingPeerReview
BASEComplete
PendingManualMoveToTEST
InTEST
TESTPendingPeerReview
...
BEST0012 - New License Key Activated
Current State
In_PREP
Phase
PREP
Organization
Best Health (BEST)
System
Interoperability 2020 (INTEROP2020)
Open Date
May 17, 2023 14:08
Opened By
smith, john
Responsible Org
Best Health (BEST)
Owner
smith, john
Description
Current license key expires at the end of the month. Activating new license key that expires April 4, 2025
Priority
Normal
CCRTier
0 - Documentation Only
iService Ticket(s)
JIRA(s)
Tech Help(s)
Prerequisite CCR(s)
Related CCR(s)
Type - Subtype
Application Customization - InterSystems IRIS
Updates CC List

CCR Home Page (cont.)

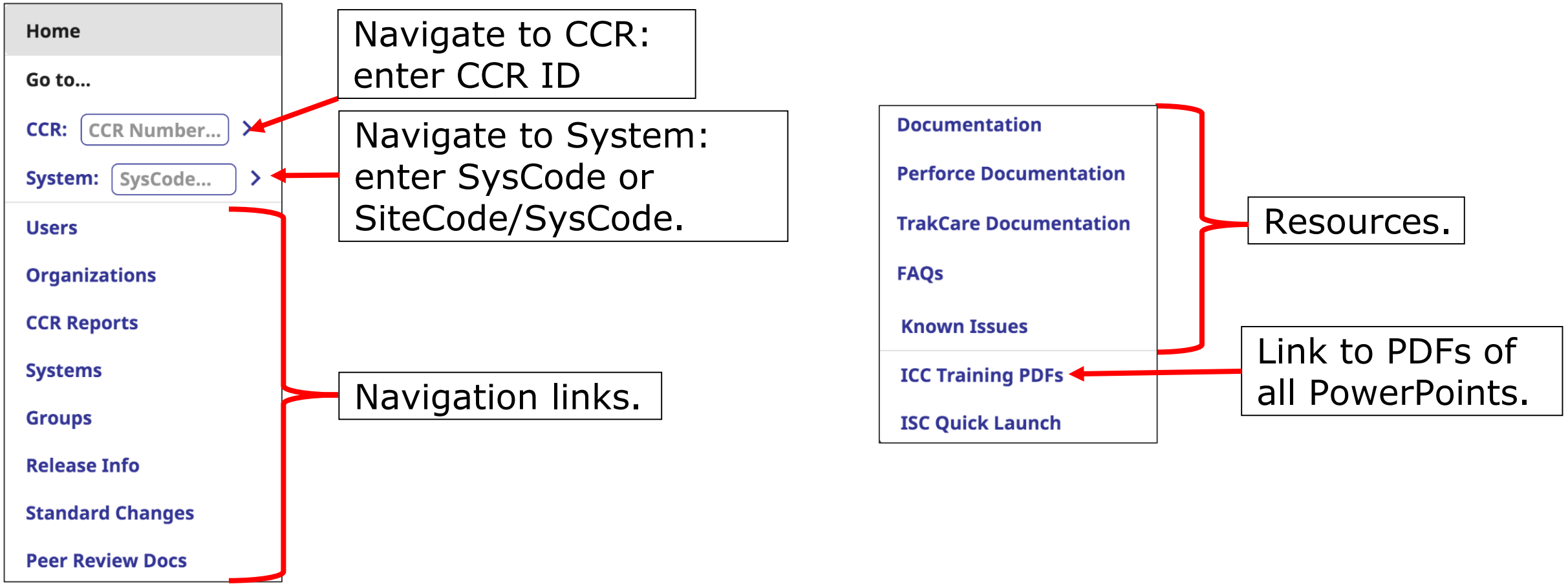
- Capabilities:
  - Create CCR.
  - Show CCRs for all Systems across Organization.
- Notable filters:
  - Restriction of Only those I have been involved with.
  - Option to Include Inactive.
    - Closed, cancelled, and merged CCRs not shown by default.
  - Search based on Title or Description.

Navigation Menu

- Available from top-left corner of every page.

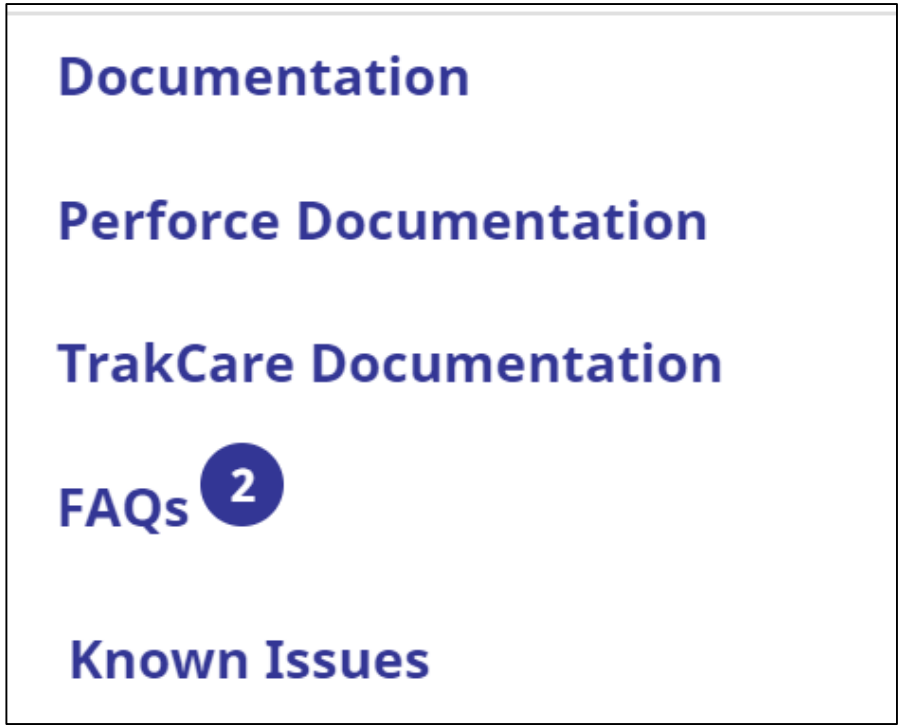


Navigation Menu (cont.)



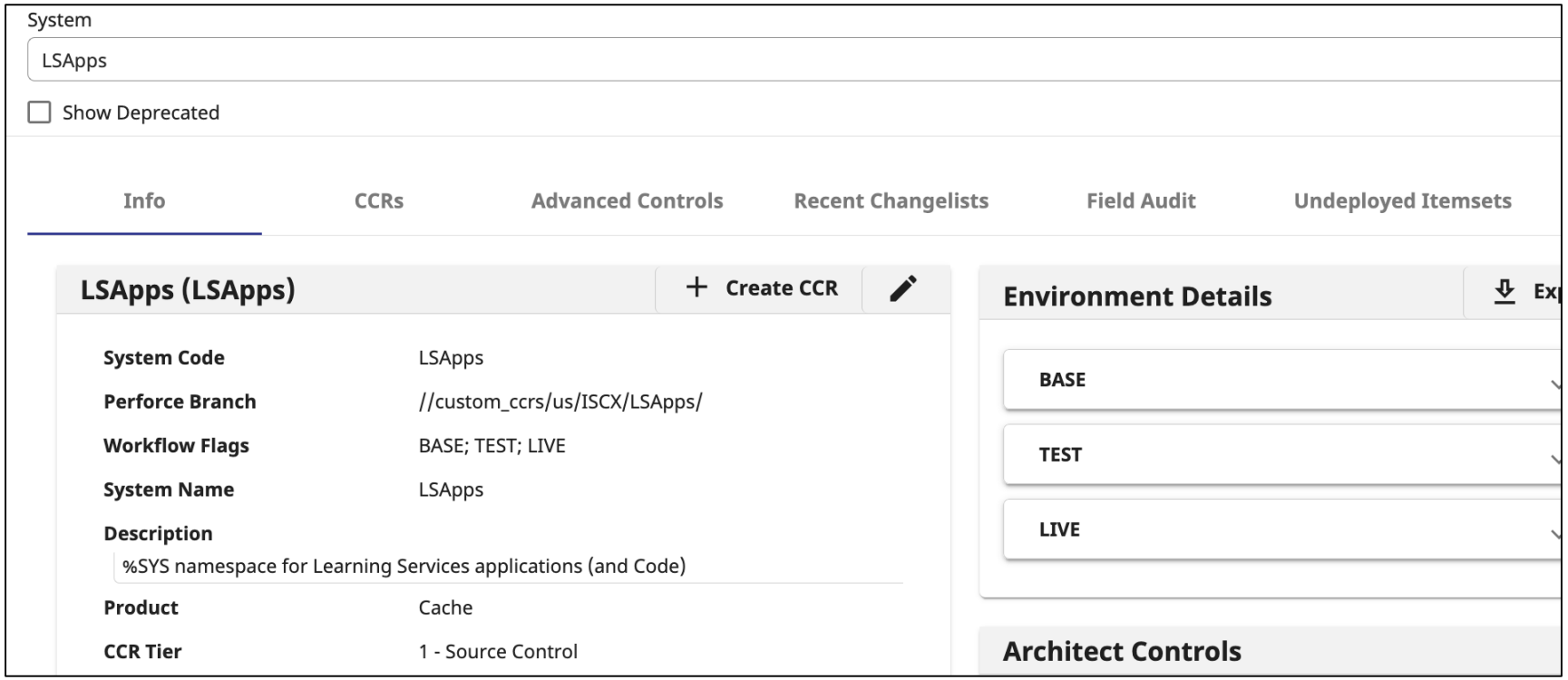
CCR FAQ

- Number of unread FAQ shown in navigation menu.
  - Great resource for delta training!
- Notification disappears after viewing CCR FAQs page.
- Any InterSystems employee can update or create FAQ.



CCR System Details Page

- Contains configuration details for each CCR System.
- Menu > Systems.



Part 3: Introduction to CCR Usage Tiers

CCR Transport – What does it do?

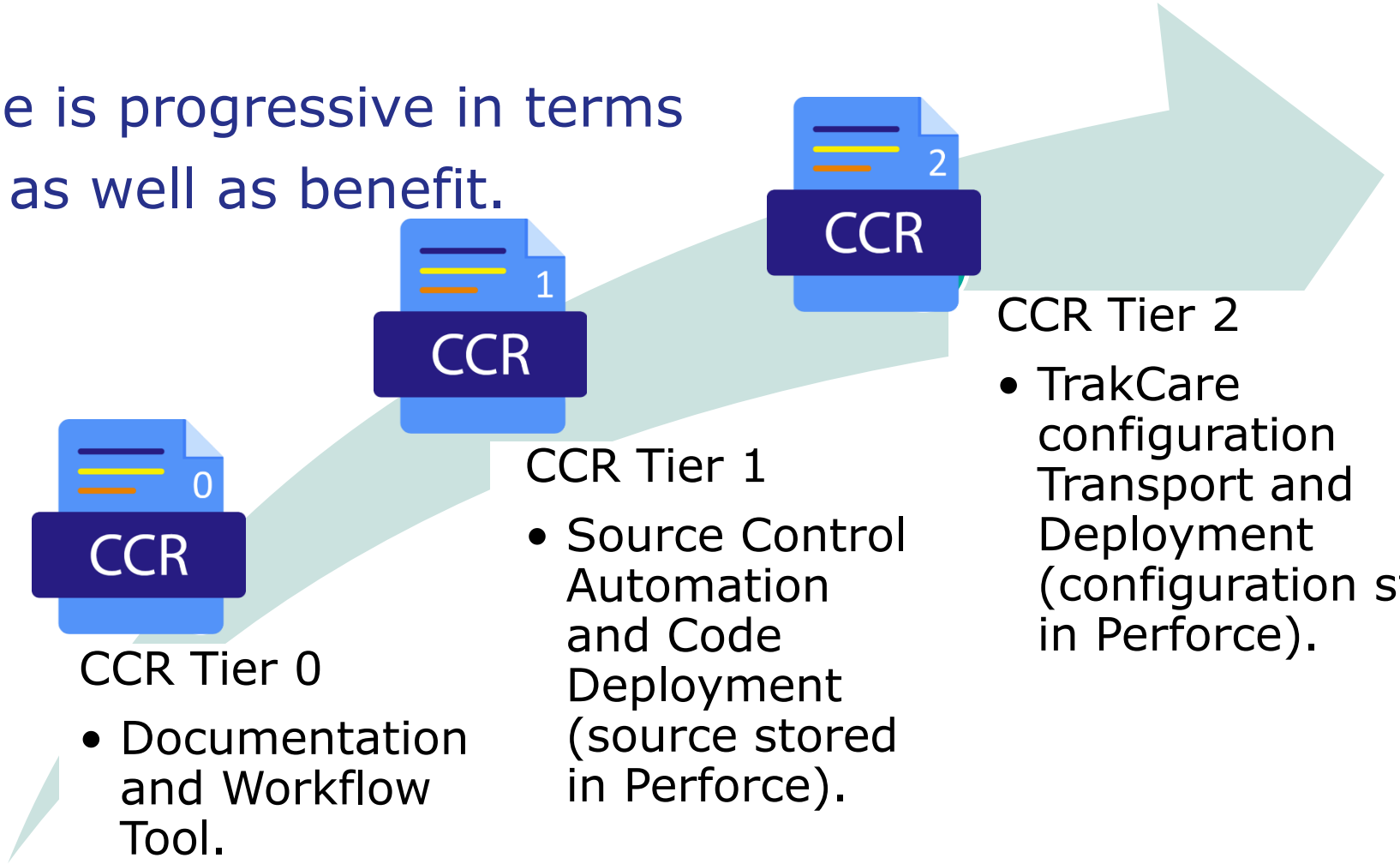
- Mechanism for moving changes between environments, CCR, and Perforce.
- Updates in BASE flagged as changed and exported.
- Exported items transported from BASE into Perforce (source control).
- Items transported out of source control into next environment.

CCR Usage Tiers

- There are different tiers of CCR usage for a project.
  - Provides flexibility for many types of applications to use CCR.
- Projects should determine their appropriate Tier of usage.
- Documentation and training applicable to a Tier should be fully understood prior to enabling that Tier.

CCR Usage Tiers (cont.)

- Tiered usage is progressive in terms of complexity as well as benefit.



CCR Tier 0

- Documentation and Workflow Tool.

CCR Tier 1

- Source Control Automation and Code Deployment (source stored in Perforce).

CCR Tier 2

- TrakCare configuration Transport and Deployment (configuration stored in Perforce).

Example Tier 0 Changes

- File system path changes.
- Memory settings.
- User creation.
- Patching.
- Upgrades.
- Any manual change to the environment or System.

Example Tier 1 Changes

- Classes.
- Routines.
- Reports.
- CSP Pages.
- JavaScript.
- Integration logic.
- DTL.
- Productions.

Example Tier 2 Changes

- TrakCare Code Tables
  - Layouts.
  - Security groups.
  - Workflow.

Quiz: CCR Tiers and Source Control

Question:

At which CCR Tier(s) are changes versioned and stored in Perforce? Select one.

A. CCR Tier 0.

B. CCR Tier 1.

C. CCR Tier 2.

D. CCR Tiers 0 and 1.

E. CCR Tiers 1 and 2.

F. CCR Tiers 0, 1 and 2.

Quiz: CCR Tiers and Source Control (cont.)

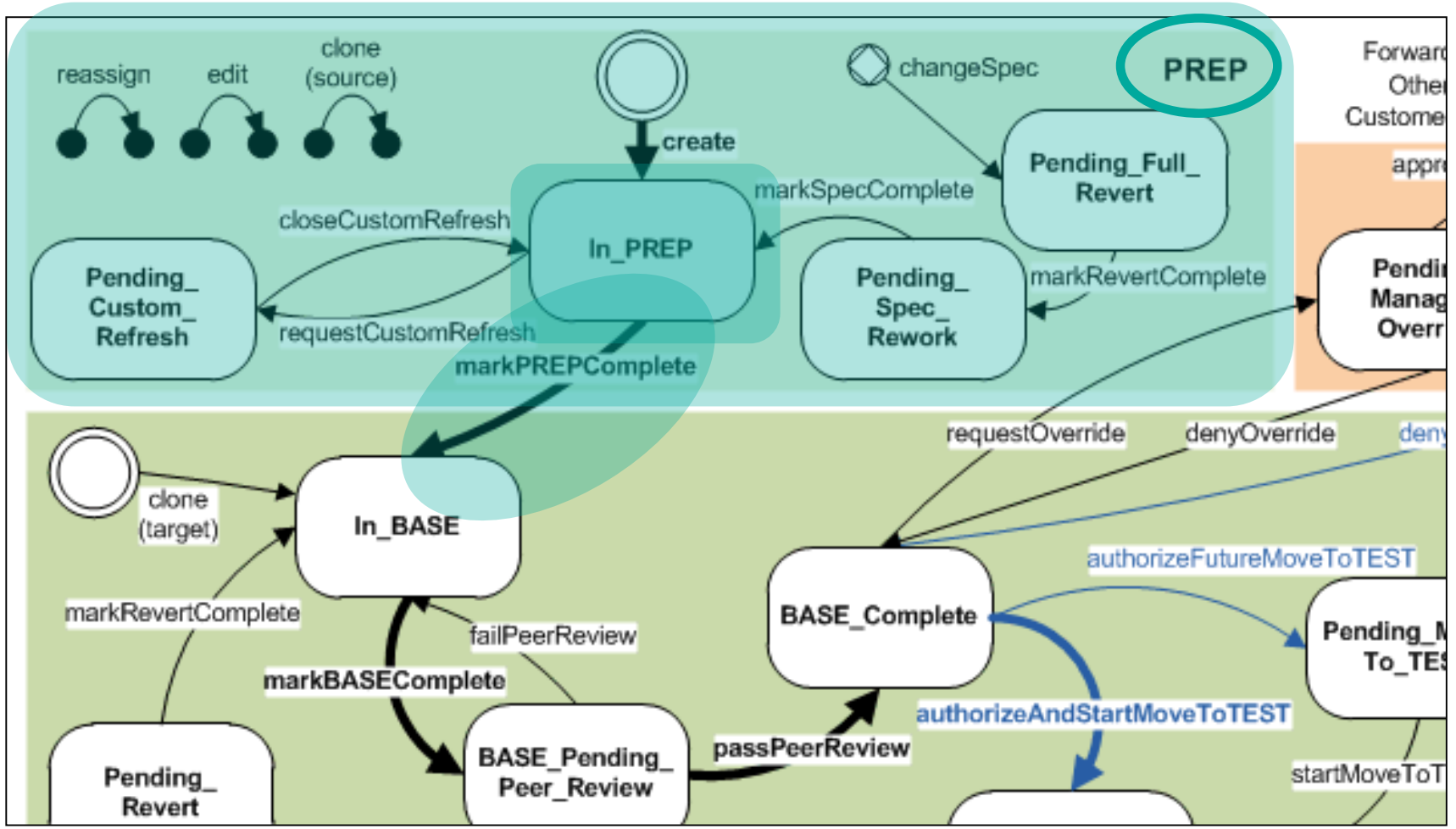
Answer:

E. CCR Tiers 1 and 2.

Part 4: CCR Workflow Overview

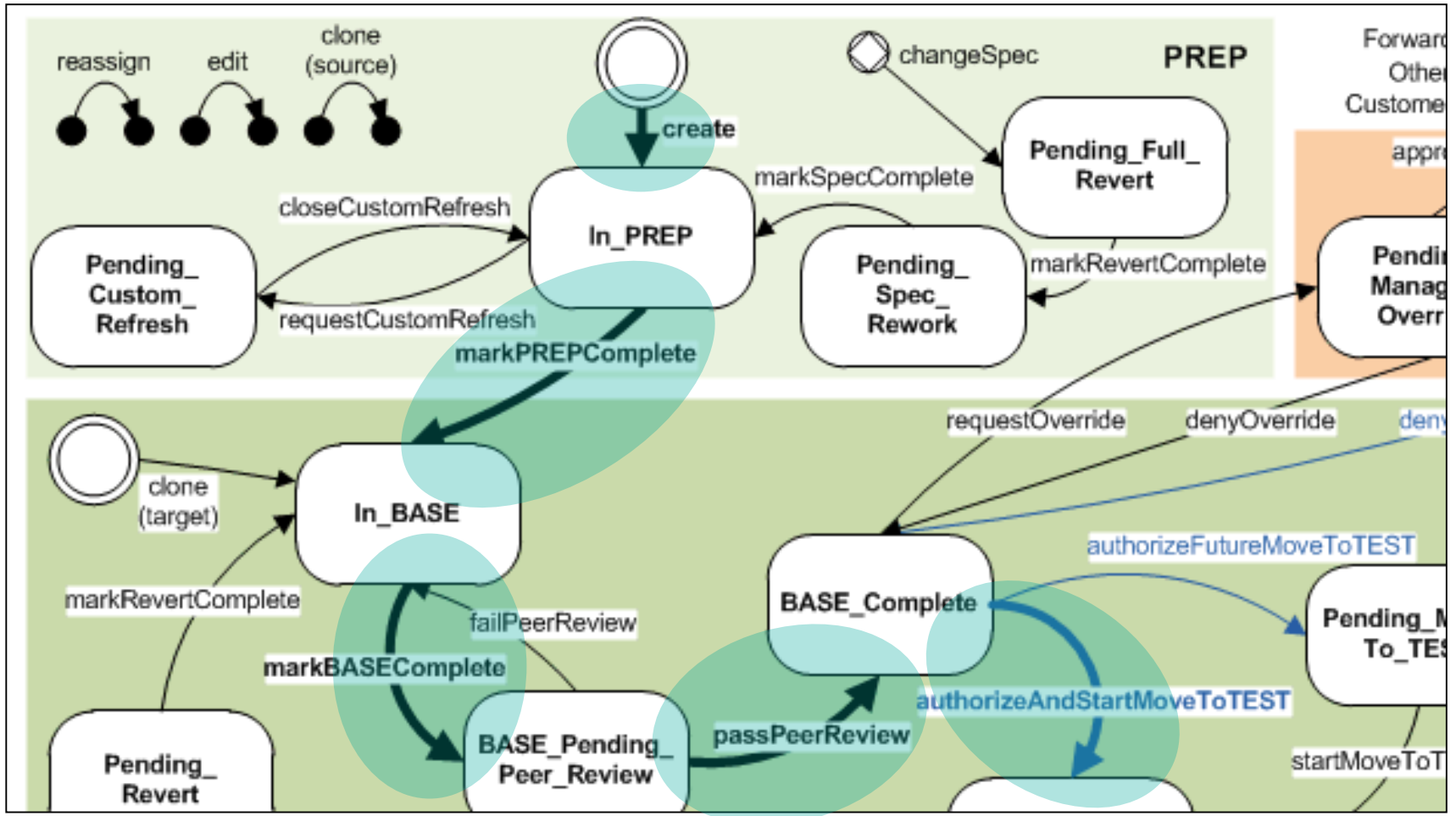
CCR Workflow Vocabulary

- State = current position within workflow.
  - In_PREP.
- Phase = collection of states.
  - PREP.
- Transition = move between CCR states.
  - markPREPComplete.



CCR Workflow Vocabulary

- Default workflow refers to typical workflow for most CCRs in System.



Part 5: Principle of Little and Often

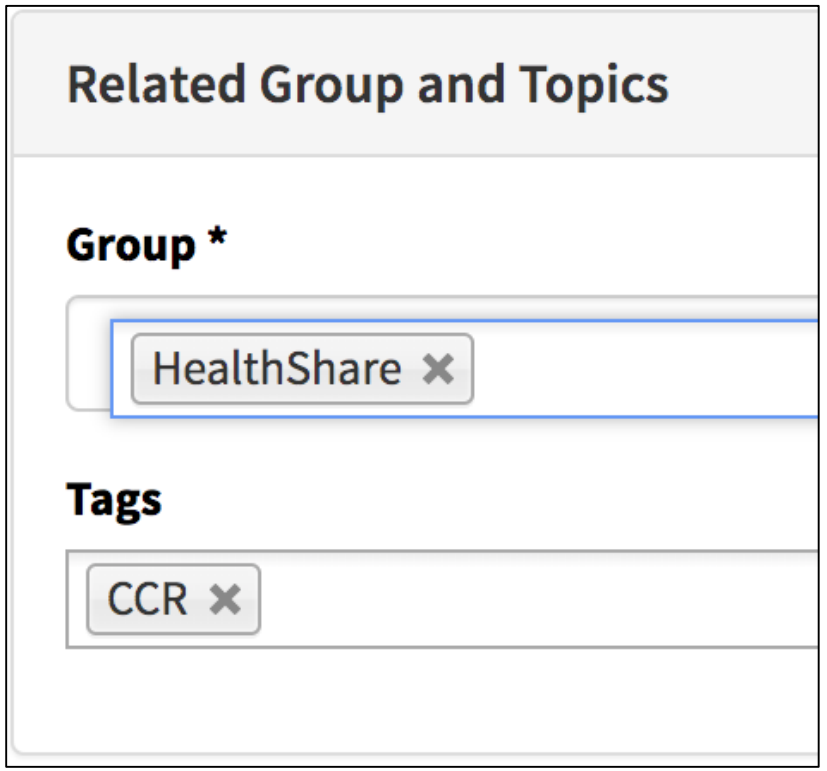
Principle of Little and Often

- Critical to successful usage of CCR.
- Minimize number of changes in 1 CCR.
  - All or none of the changes in a CCR progress through the workflow.
    - Difficult to isolate 1 change to progress separately.
  - Reduces the probability of blocked workflow due to dependencies.
  - Enables clear documentation of the impact of a CCR.
    - Better titles and descriptions due to more narrowly defined changes.
- Progress CCRs quickly (but safely).
  - Do not allow CCRs to remain mid-workflow for too long (weeks).
  - Minimize time between starting change and completing in all environments.

Part 6: Resources

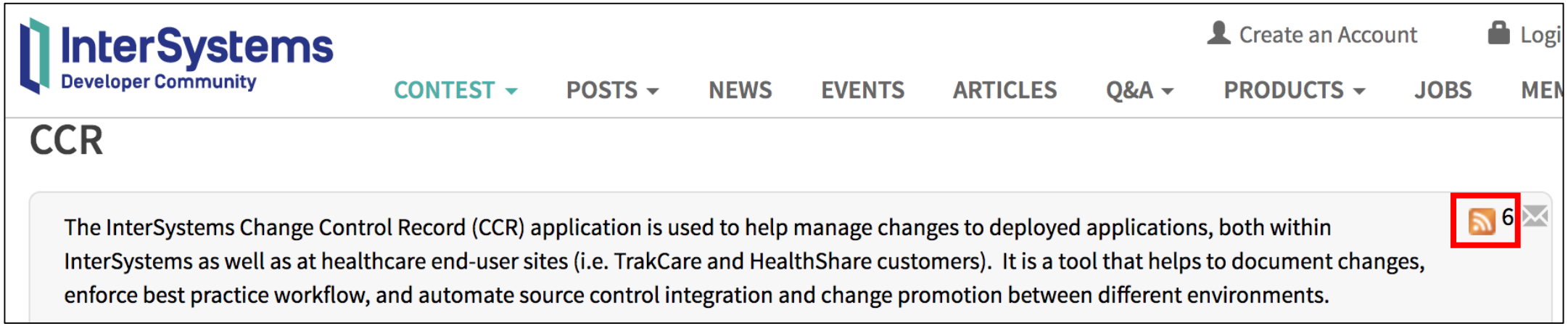
Developer Community

- community.intersystems.com.
- Please post your questions so that others may benefit from answer too.
- When creating post, enter group corresponding to InterSystems product and CCR for tag.



Developer Community (cont.)

- To subscribe to posts with CCR tag:
  - Go to community.intersystems.com/tags/ccr.
  - Click envelope icon on right.



Learning Resources

- All Course Content PDF.
  - Merge of all PDFs of all training slides.
  - Also available from navigation menu.
- InterSystems Change Control (ICC) online learning.
  - Go to learning.intersystems.com and search for CCR.
  - Growing catalog of courses available, new courses announced on Developer Community.
  - No exercises available online.

Learning Resources (cont.)

- CCR Online FAQs.
  - Major functionality changes and updates posted here.
- CCR Online Documentation.
  - See full workflow diagram under State Diagram tab.

Additional InterSystems-Internal Resources

- For InterSystems Employee use:
- ccrusers@InterSystems.com internal mailing list for CCR questions
  - All users of CCR should join this mailman list to be kept up to date with CCR-related announcements, enhancements, outage notifications, etc.
  - InterSystems users are expected to keep their customer in the loop on new enhancements, planned outages, etc.

Additional InterSystems-Internal Resources

- perforce@InterSystems.com internal mailing list for Perforce questions.
- intersystemscorporation.sharepoint.com/sites/apps_CCR Application Project site on SharePoint.

Summary

- What are the key points for this module?

Demonstration

- Overview of using CCR to document and progress a change.