



Using Collector for Offline Editing with *Versioned Data*

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Purpose

- **Working with Versioned Data in Collector for offline editing**
 - Workflow overview
 - How to prepare data
 - How to retrieve edits
 - What to expect
- **Recommended experience:**
 - Versioning / Database Administration
 - ArcGIS Server Feature Services
 - Collector

Basis of Presentation

- ArcGIS for Server documentation “Offline maps and versioned data”
- <https://server.arcgis.com/en/server/latest/publish-services/windows/offline-maps-and-versioned-data.htm>

The screenshot shows the ArcGIS for Server documentation website. The top navigation bar includes 'ArcGIS for Server', 'Documentation', 'Pricing', and 'Support'. A search bar and 'Sign In' link are also present. The main header features 'ArcGIS for Server (10.3 and 10.3.1)' and a secondary navigation menu with 'Home', 'Get Started', 'Publish Services', 'Create Web Apps', 'Administer', and 'Cloud'. The breadcrumb trail reads 'Publish Services > Types of services > Feature services'. On the left, a sidebar menu titled 'What types of services can you publish?' lists various service types, with 'Offline maps and versioned data' selected. The main content area is titled 'Offline maps and versioned data' and includes a 'Viewing: Windows | Linux' selector. A list of topics is provided, including 'Create a version for each offline map', 'Create a version for each user', 'Examples', and three workflow examples for downloading maps. A partial paragraph at the bottom begins with 'When a map that contains an editable feature service that uses versioned data is downloaded and taken offline, a new'.

Collector and Versioned Data

Collector and Versioned Data

- Why versioned data?
- History of Versioned Editing in Collector
- Scenarios requiring versioned data

Why versioned data?

- **Replication**
- **Editing geometric networks**
- **Working with complex data (such as parcel fabrics)**
- **Multi-user editing**

History of Versioned Editing in Collector

- **January 2013**
 - Collector for ArcGIS is released
- **January 2014**
 - ArcGIS Server 10.2.1 is released – Introduction of Sync capabilities
- **March 2014**
 - Collector 10.2.2 is released – Introduction of offline editing
- **April 2014**
 - ArcGIS Server 10.2.2 is released – Allowed for publishing Sync-enabled feature services (unversioned)
- **December 2014**
 - ArcGIS Server 10.3 is released – Allowed for publishing of Sync-enabled versioned data
- **January 2015**
 - Collector 10.3 is released – Support for disconnected editing with versioned data
 - Requires ArcGIS Server 10.3

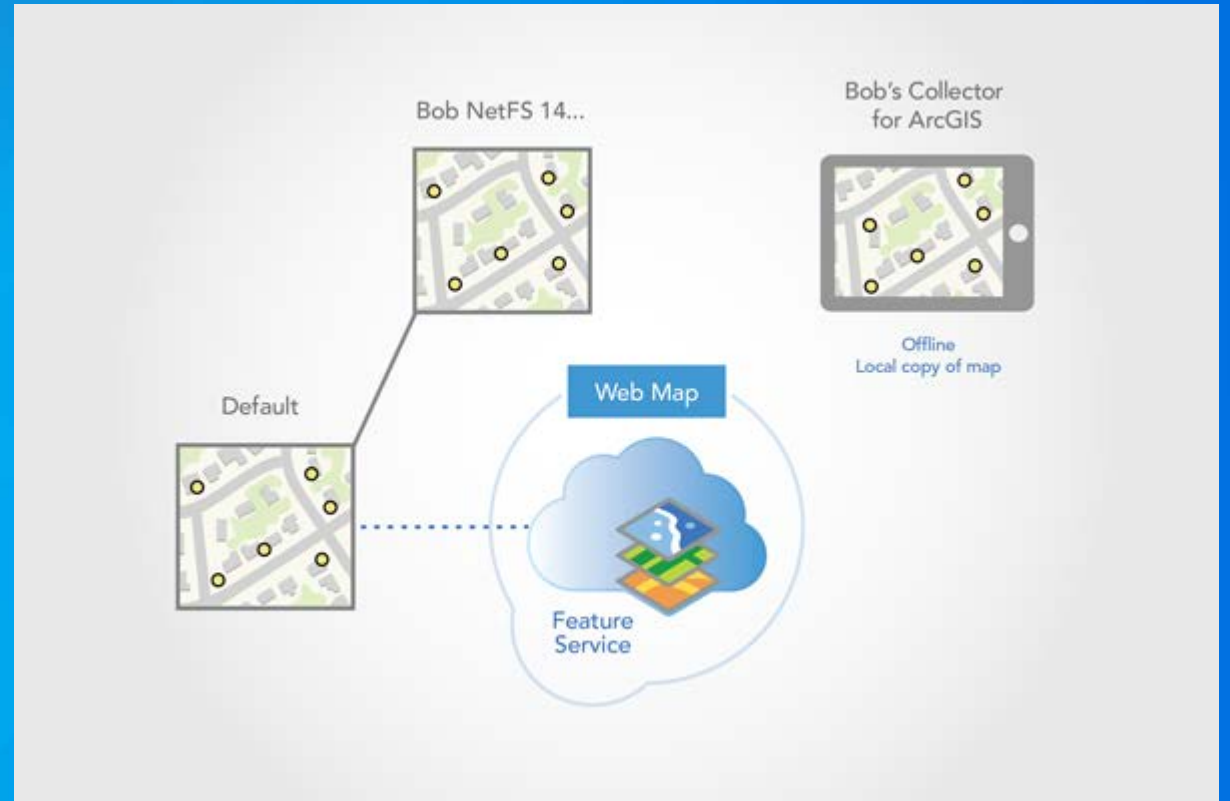
Scenarios requiring versioned data

- **Daily Maintenance**
- **Short-Term Projects**
- **Long-Term Projects**

Scenarios requiring versioned data

- **Daily Maintenance**

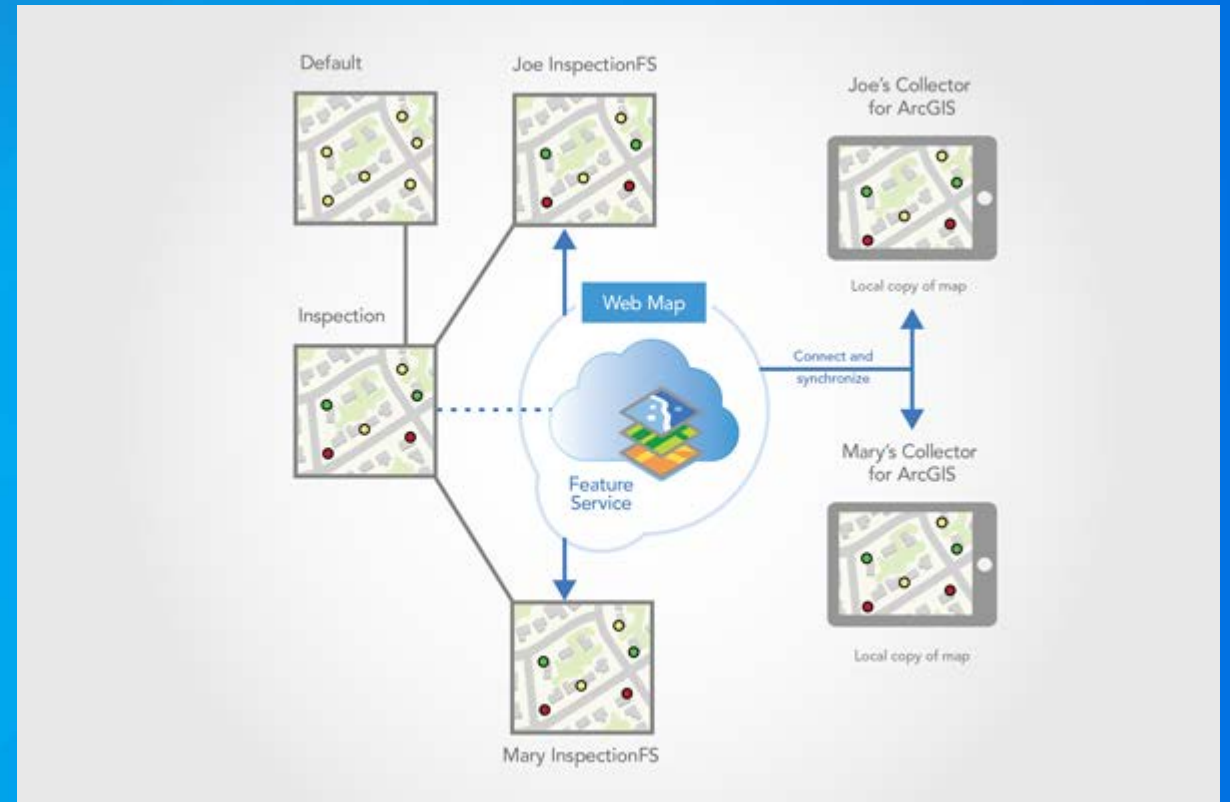
- **Field workers go out in the field for daily work**
- **Prior to leaving the office, he downloads the map using Collector**
- **After working in the field, user returns to the office and synchronizes their data**
- **Field worker downloads a new map when leaving the office again**



Scenarios requiring versioned data

- **Short-Term Projects**

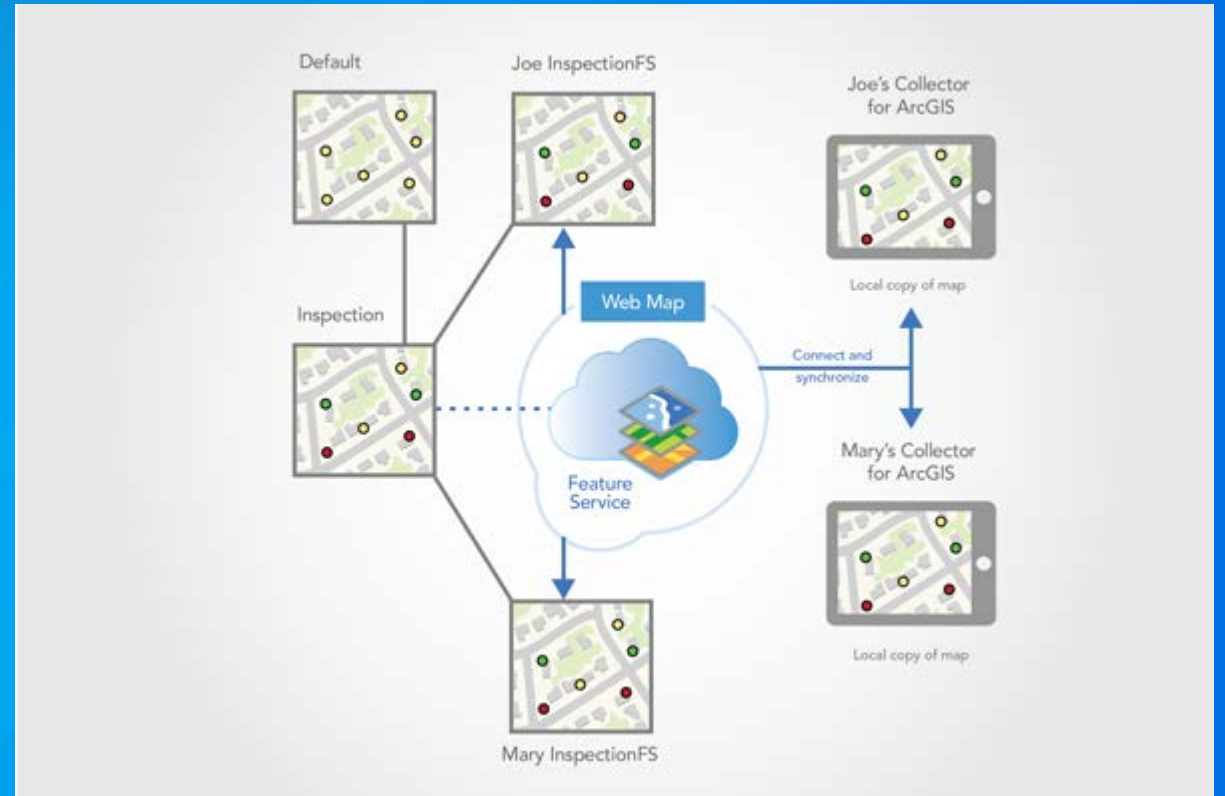
- Project has its own version with personal child versions created for each field worker
- Field worker versions are synchronized with the project version nightly by the DB Admin
- The next day, workers can see all other users' edits from the previous day
- When project is complete, the project version is synced with the parent database and deleted



Scenarios requiring versioned data

- **Long-Term Projects**

- Similar to short-term projects, but the project version is ongoing
- Field worker versions are created from a quality assurance version
- Requires extra DB-side tasks of reconciling and posting edits



How it works

Demonstration

A Closer Look

Useful Knowledge & Troubleshooting Tips

Troubleshooting Tips:

- **Advanced Feature Service Sync Settings**
- **Version Naming Considerations**
- **Working with Existing or non-DEFAULT versions**
- **Portal vs. ArcGIS Online**
- **Frequently Asked Questions**

Advanced Feature Service Sync Settings

Feature Service Advanced Options

Editor Info

Add realm to user name when applying edits (username@realm)

@

Sync

Create a version for each

Downloaded Map

User

Web Content

Filter web content

OK Cancel

- Create a version for each:
 - Downloaded Map
 - User

Create a version for each offline map

- A new version is made every time a map with an editable feature service is taken offline
- **Version name uses the following syntax:**
 - **<Name of User who Downloads the Map>_<Name of Feature Service>_<Unique ID>**



- **The map version remains in the database even after the map is removed from the device – should be deleted after reconciling and posting.**

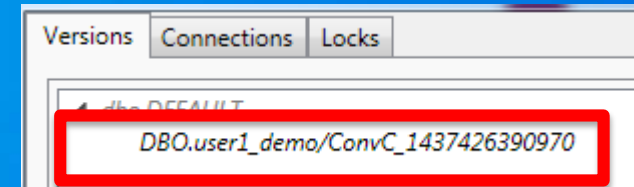
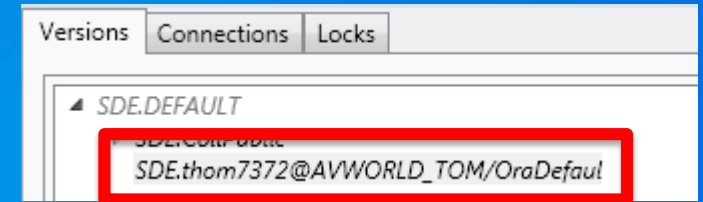
Create a version for each user

- A new version is generated for each user that downloads a map containing an editable feature service.
 - If x users download a map, x versions are generated
- **Version name uses the following syntax:**
 - **<Name of User who Downloads the Map>_<Name of Feature Service>**

- **The user version remains as long as the user has a map downloaded**

Version Naming Considerations

- GIS-tier authentication:
 - Versions name is username that is accessing the service.
 - Unsecured will always show “Esri_Anonymous”



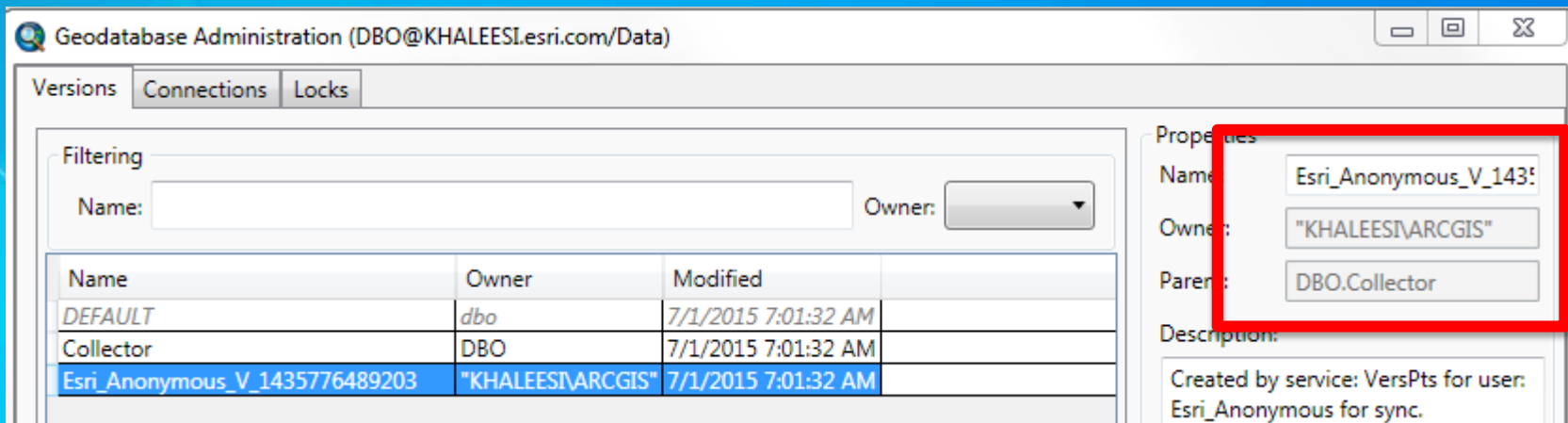
A screenshot of the ArcGIS Versions pane showing a table of versions. The 'Versions' tab is selected. The table has columns for Name, Owner, and Modified. The row for 'Esri_Anonymous_V_1435776489203' is highlighted in blue and has a red rectangular box around it.

Name	Owner	Modified
DEFAULT	dbo	7/1/2015 7:01:32 AM
Collecto	DBO	7/1/2015 7:01:32 AM
Esri_Anonymous_V_1435776489203	"KHALEESI\ARCGIS"	7/1/2015 7:01:32 AM

- Note: Web-tier authentication is not supported with ArcGIS Online through Collector

Version Naming Considerations (Continued)

- Q: Can I change the name of a version once it has been created?
 - A: No.
 - Changing “Parent” version name requires the service be stopped, once name is changed, service will not be able to start again.
 - It is possible to change the name of the replica version, but this prevents it from being able to Sync with its parent. The name can be changed back to its original name and sync functionality will return.



The screenshot shows the Geodatabase Administration interface for a user named DBO@KHALEESI.esri.com. The 'Versions' tab is active, displaying a table of versions. The version 'Esri_Anonymous_V_143776489203' is selected, and its properties are shown on the right. A red box highlights the 'Name' field, which contains 'Esri_Anonymous_V_143776489203'. The 'Owner' is 'KHALEESI\ARCGIS' and the 'Parent' is 'DBO.Collector'. The description indicates it was created by the service 'VersPts' for the user 'Esri_Anonymous' for sync.

Name	Owner	Modified	
DEFAULT	dbo	7/1/2015 7:01:32 AM	
Collector	DBO	7/1/2015 7:01:32 AM	
Esri_Anonymous_V_143776489203	"KHALEESI\ARCGIS"	7/1/2015 7:01:32 AM	

Properties:

Name: Esri_Anonymous_V_143776489203

Owner: "KHALEESI\ARCGIS"

Parent: DBO.Collector

Description:

Created by service: VersPts for user: Esri_Anonymous for sync.

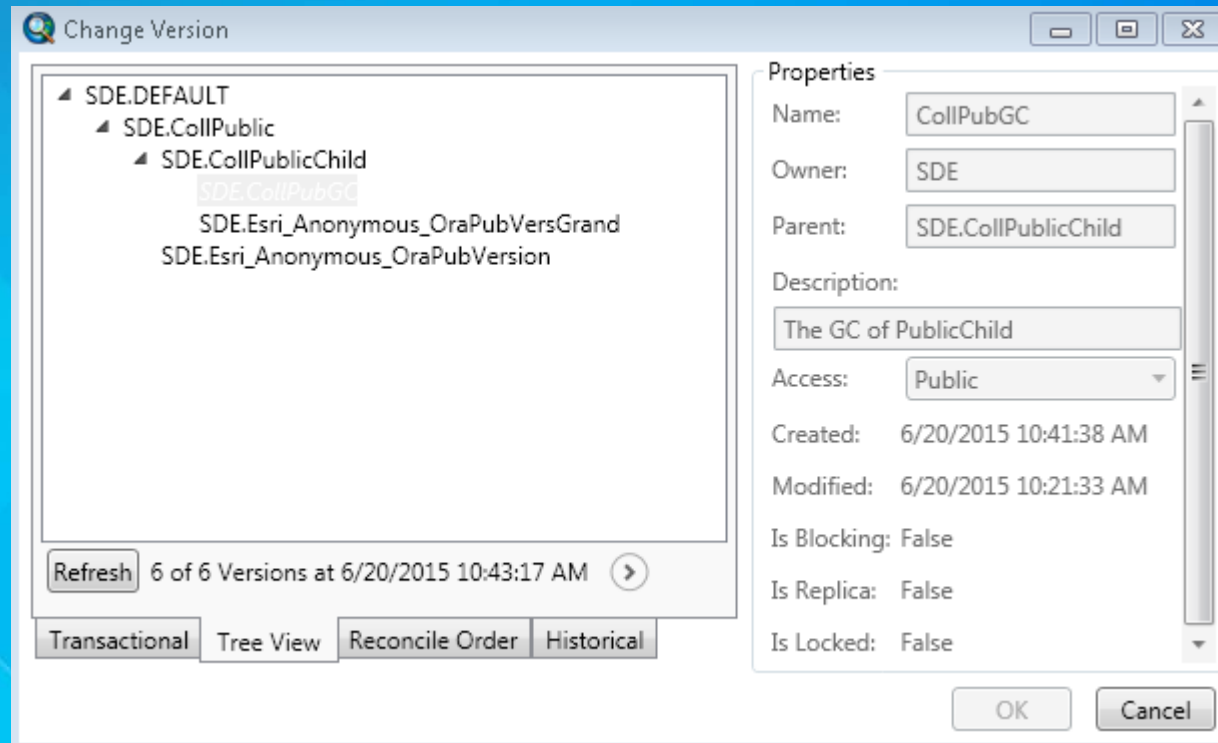
Version Naming Considerations (Continued)

- Q: Can I change the name of a version once it has been created? (continued)
 - If version has had its name changed/ been deleted and Syncing fails, a generic error message similar to this should be found in the Server Logs:

```
<Msg time="2015-07-02T06:27:26,31" type="DEBUG" code="9999" source="Server" process="11000" thread="1" methodName=""
machine="KHALEESI.ESRI.COM" user="" elapsed="">com.esri.arcgis.discovery.ejb.ArcGISServiceException: Could not service request.
  at com.esri.arcgis.discovery.ejb.impl.GPServerSyncBean.handleRequest (GPServerSyncBean.java:77)
  at sun.reflect.GeneratedMethodAccessor334.invoke (Unknown Source)
  at sun.reflect.DelegatingMethodAccessorImpl.invoke (DelegatingMethodAccessorImpl.java:43)
  at java.lang.reflect.Method.invoke (Method.java:606)
  at org.apache.openejb.core.interceptor.ReflectionInvocationContext$Invocation.invoke (ReflectionInvocationContext.java:162)
  at org.apache.openejb.core.interceptor.ReflectionInvocationContext.proceed (ReflectionInvocationContext.java:144)
  at org.apache.openejb.monitoring.StatsInterceptor.record (StatsInterceptor.java:164)
  at org.apache.openejb.monitoring.StatsInterceptor.invoke (StatsInterceptor.java:92)
  at sun.reflect.GeneratedMethodAccessor108.invoke (Unknown Source)
  at sun.reflect.DelegatingMethodAccessorImpl.invoke (DelegatingMethodAccessorImpl.java:43)
  at java.lang.reflect.Method.invoke (Method.java:606)
  at org.apache.openejb.core.interceptor.ReflectionInvocationContext$Invocation.invoke (ReflectionInvocationContext.java:162)
  at org.apache.openejb.core.interceptor.ReflectionInvocationContext.proceed (ReflectionInvocationContext.java:144)
  at org.apache.openejb.core.interceptor.InterceptorStack.invoke (InterceptorStack.java:122)
  at org.apache.openejb.core.stateless.StatelessContainer._invoke (StatelessContainer.java:221)
  at org.apache.openejb.core.stateless.StatelessContainer.invoke (StatelessContainer.java:174)
  at org.apache.openejb.core.stateless.StatelessContainer.invoke (StatelessContainer.java:136)
  at org.apache.openejb.server.ejbd.EjbRequestHandler.doEjbObject_BUSINESS_METHOD (EjbRequestHandler.java:238)
  at org.apache.openejb.server.ejbd.EjbRequestHandler.processRequest (EjbRequestHandler.java:129)
  at org.apache.openejb.server.ejbd.EjbDaemon.processEjbRequest (EjbDaemon.java:196)
  at org.apache.openejb.server.ejbd.EjbDaemon.service (EjbDaemon.java:149)
  at org.apache.openejb.server.ejbd.EjbServer.service (EjbServer.java:71)
  at org.apache.openejb.server.ejbd.KeepAliveServer$Session.service (KeepAliveServer.java:213)
  at org.apache.openejb.server.ejbd.KeepAliveServer.service (KeepAliveServer.java:233)
  at org.apache.openejb.server.ejbd.EjbServer.service (EjbServer.java:66)
  at org.apache.openejb.server.ServicePool$2.run (ServicePool.java:91)
  at org.apache.openejb.server.ServicePool$3.run (ServicePool.java:120)
  at java.util.concurrent.ThreadPoolExecutor.runWorker (ThreadPoolExecutor.java:1145)
  at java.util.concurrent.ThreadPoolExecutor$Worker.run (ThreadPoolExecutor.java:615)
  at java.lang.Thread.run (Thread.java:745)
Caused by: com.esri.arcgis.discovery.ejb.ArcGISServiceException: Could not service request.
  at com.esri.arcgis.discovery.ejb.util.EJBBase.handleRequestBase (EJBBase.java:553)
  at com.esri.arcgis.discovery.ejb.impl.GPServerSyncBean.handleRequest (GPServerSyncBean.java:74)
  ... 29 more
</Msg>
```

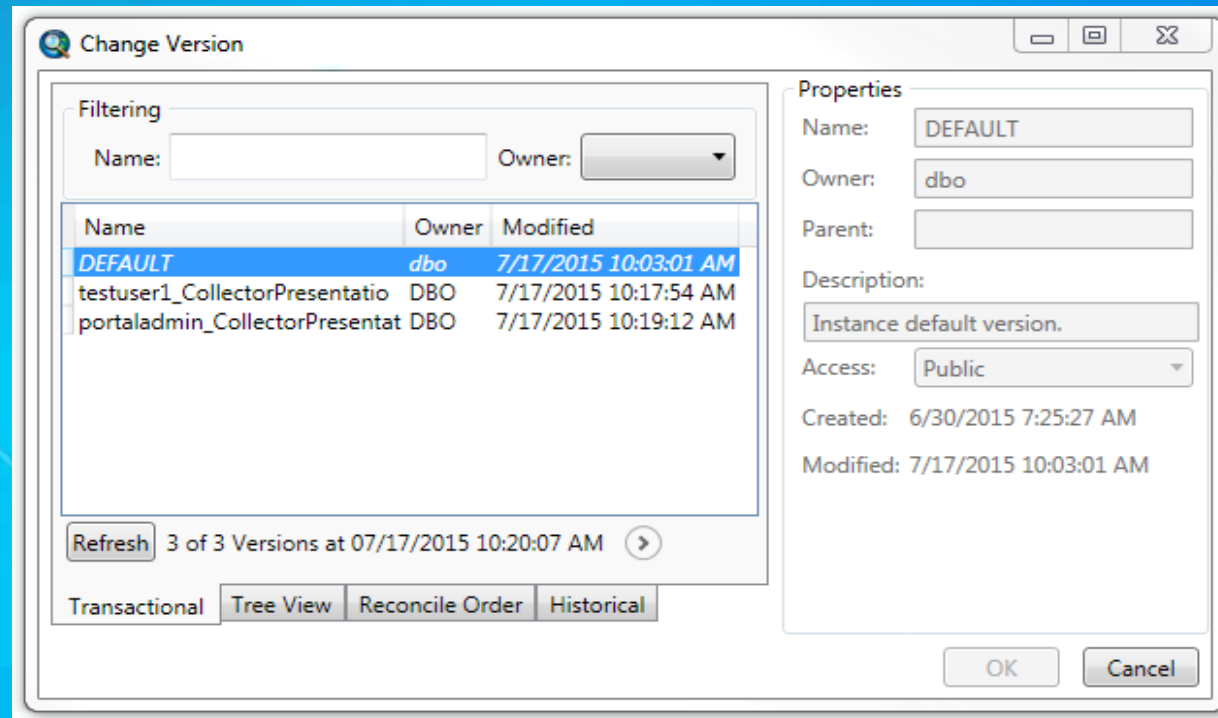
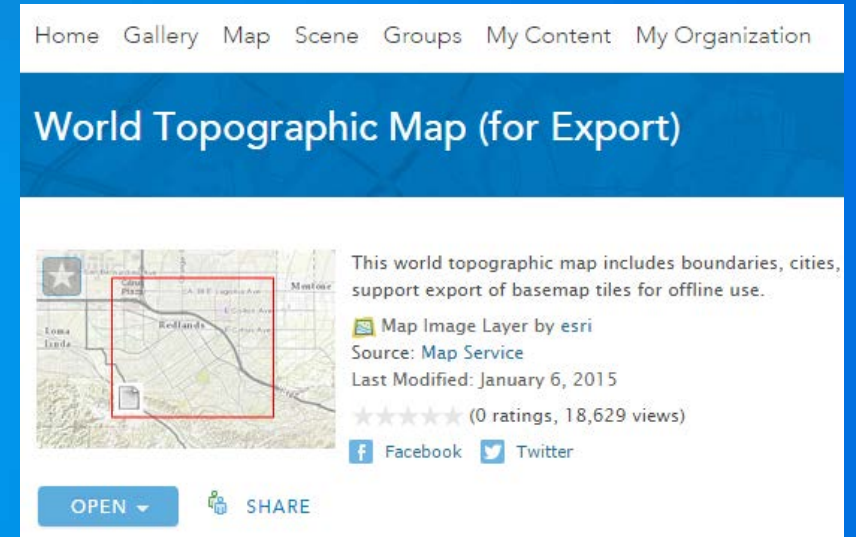
Working with Existing or non-DEFAULT Versions

- Q: How “deep” in the version hierarchy can I go?
 - A: We have successfully tested publishing services from a Parent (Default), Child, Grandchild, and Great Grandchild



Portal vs. ArcGIS Online

- Nearly the same experience as with ArcGIS Online
- Different workflow for making web map offline-ready
- Esri_Anonymous is not used in the version name



FAQs

- **Q: Does it matter if my data is in a feature dataset?**
 - **A: No, we have tested data in and out of feature datasets successfully**
- **Q: Does the DB type matter?**
 - **A: We tested with SQL Server and Oracle, and found no difference in behavior**
- **Q: I synced my data but my edits are not visible to others, why?**
 - **A: The DB Admin must first post and reconcile your edits with the version that the service uses before the edits can be seen at the service level**

FAQs

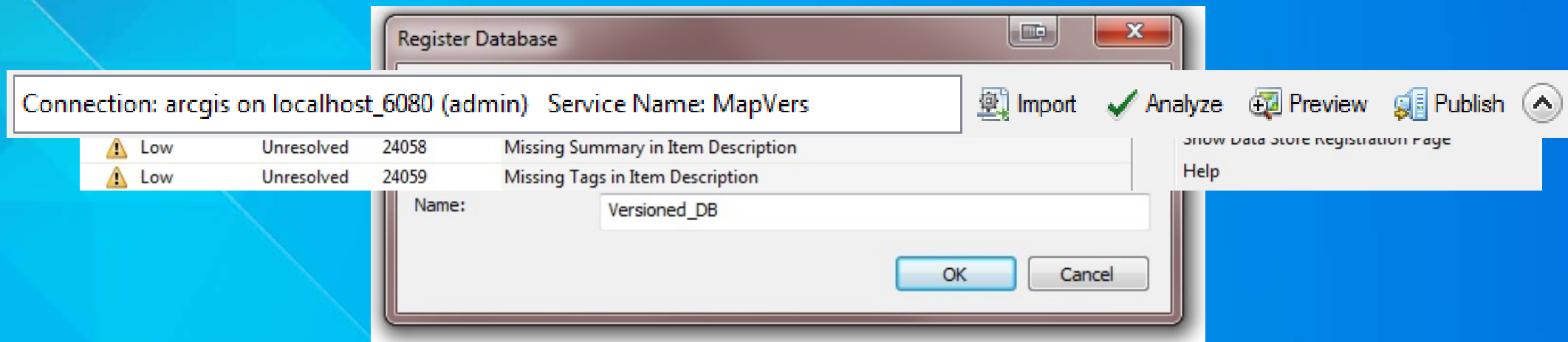
- **Q: How do I know what version is being used in my Collector Webmap?**
 - **A: If you do not know which version is being used in Collector but do not want to sync any edits from the offline copy, have the user try and Sync back the map with no edits while the ArcGIS Server has Debug-level logging turned on.**
 - **When a sync job happens with no edits or updates applied, the logs will still reveal which version is being used:**

DEBUG	Jul 17, 2015, 11:37:24 AM	Using state id: 53 as the common ancestor while reconciling version: SYNC_RECEIVE_REC_4494_1 with version: "KHALEESIARCGIS".yoshi_MapVers_1437157704500. Replica: "KHALEESIARCGIS".Ags_Fs_1437157705480.	System/SyncTools.GPServer
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FAQs

- Q: I am trying to publish my Feature Service using a non-DEFAULT version, but I get error messages saying the data source is not registered. The database is registered though. What do I do?
 - A: Only the DEFAULT version is registered with ArcGIS Server by default. The following steps will allow you to register a different version:

3. Right-click the error message in the Analyze dialog, click the data source is not registered, and select the holded option for "Register Data Source with Server".





Understanding our world.



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