# Best Practice - FEB Upgrade

Performing a FEB upgrade is not a trivial task and it is important to take the necessary steps to ensure that you don't lose any data in the event of an unexpected error.

Pre-Upgrade Steps

1. **Take a full off-line back up of your FEB DB**. If anything goes wrong in the upgrade, having a full back-up gives you a restore point.

2. **Perform upgrade first on a pre-prod environment**. The time that it takes to upgrade is proportional to the number of applications deployed to your FEB server. It is recommended to first perform the upgrade on a pre-prod environment with the production data to see how long the upgrade will take and if any applications will fail the upgrade process.

3. **Take FEB offline from public access.** It is important that you disable public access to your Forms application. If you have a webserver sitting in front of FEB, turn it off or redirect it to a maintenance page for the duration of the upgrade. If you disable your webserver then you will need to modify your serverURI in the Builder_config.properties so that you can access the server directly without any issues.

4. **Verify that the Forms trace string in WebSphere is NOT enabled**. The Forms trace string is "com.ibm.form.*" and you can check it from the Troubleshooting section of the WebSphere Admin console.
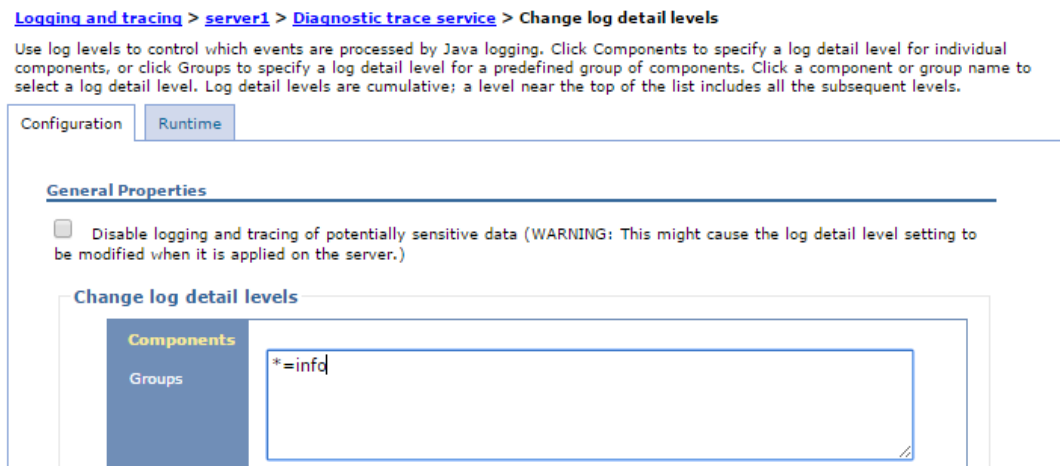
Post-Upgrade Steps

1. Did you customize the location of the extensions directory?

    The default location is c:\ibm\Forms\extensions or /opt/ibm/Forms/extensions. If you have your directory in a custom location then you will need to re-apply the edit to the fsp.properties that defines that custom location. Check out the details on the IBM Knowledge Center.

2. After upgrading the FEB application, the first time you try to access FEB you will be redirected

to the **Setup** screen.

The setup can only be run by a user in the **AdministrativeUsers** role for the FEB application (found in Security role to User/Group mapping section in the WAS Admin Console).

There are two parts to any FEB upgrade; updating the global FEB database schema and tables and upgrading each application (the application.xml and their table structure) to the newer version.

The application upgrade process runs in the background and FEB can be made available during this time. If a user tries to access an application that has not been upgraded they will see a message telling them to check back in a bit. By accessing the application, it is added to the top of the upgrade stack, therefore within a few minutes it should be available again.

Troubleshooting Applications that Fail to Upgrade

It is our goal to ensure that no app fails the upgrade process. If any applications do fail the upgrade process, then there are a few things that you can do to investigate what happened BEFORE calling IBM Support.

1. **Check the SystemOut.log**. Each application failure will be logged in the SystemOut.log. You will likely find a stack trace related to why the upgrade failed.

2. **Check the FREEDOM.APP_UPGRADE table in the database**. If you have a lot of apps on your server you may find that your logs roll-over and therefore will not contain all the upgrade failures when you go to review them. You can perform a simple SQL statement to get the APP ID, NAME and Exception that was thrown during the upgrade process:

```
db2 "SELECT * from FREEDOM.APP_UPGRADE" > app_upgrade_out.txt
```

If an application fails to upgrade then it will not be accessible, any user trying to access the application will see an error indicating that the application is unavailable and they should contact the system administrator.

If you restart the FEB application or restart the server while there are un-upgraded applications then FEB will require the Setup to be run before it can be used.

3. **Try exporting the application from the pre-upgraded database and importing into the new FEB version**. If you can download the application from the backup that was taken before upgrading FEB, then you could try importing the application as a new application. In order to export the application, you would have to have a FEB instance that was connected to the pre-upgraded database.

If an app failed to upgrade and you want to keep the same UID (URL to access the form) then you will have to delete the app from the production server and restart the server. Once the setup process is complete that app should no longer be part of the "un-upgraded" apps and then you can import (deploy with data) to re-establish the application and all its data to the production server.

4. If you have any issues with upgraded applications after upgrading FEB, **open a PMR**! Provide the SystemOut.log and the FEB application that won't upgrade.