



# ProductXpress Calculator on Android

ProductXpress Calculator on Android (provided for evaluation purposes, not yet a general release product) is a flavor of the same embedded ProductXpress Calculator that is also available on other platforms. This document provides a brief overview of this Calculator and how to use it.

## Evaluation version ONLY

ProductXpress Calculator on Android is only provided as an evaluation version for customers to test performance and other resource requirements, it is not general release software

## ProductXpress Calculator on Android vs. other platforms

### Main differences with other embedded Calculators

ProductXpress Calculator on Android is a 'normal' embedded Calculator, with some functionality stripped; that is integrated in the same manner as the Service Calculator that is the dominant deployment option. The main difference with embedded Calculator on other platforms is that they support both push and pull mode, whereas the embedded Calculator on Android only supports push mode. This means it is fully compatible with ProductXpress products for other platforms, and that when other applications that already integrate with the Calculator push mode are ported, they can continue to use their data-marshalling mechanisms, share a large part of the integration logic and payload etc.

## Relevant documentation

### Which documentation is provided for ProductXpress Calculator on Android?

ProductXpress Calculator on Android is simply a flavor of the embedded Calculator as it exists on other platforms, which is fully described in the following documents:

- ProductXpress Calculator user guide – Describes the Calculator architecture at a high level and provides overviews of common tasks, considerations and trade-offs that need to occur when integrating Calculator
- ProductXpress Calculator references guide – Fully describes the Calculator APIs; including the embedded push API, input and output formats, settings files etc.
- ProductXpress Calculator installation guide – Describes how to install Calculator on various platforms but this will be updated at a later date when this platform will be formally supported
- Integration examples – Provide examples on various platforms on how to integrate Calculator and for various styles of integration. Note that there is a separately provided Android sample application with its own documentation which is best to use for integrating the Android Calculator if you are not already familiar with ProductXpress integration

Most of the above ProductXpress documentation is applicable to ProductXpress Calculator on Android. However, since pull mode is not supported, the sections relevant to pull mode should be ignored.

### Android sample app

The sample app serves two purposes:

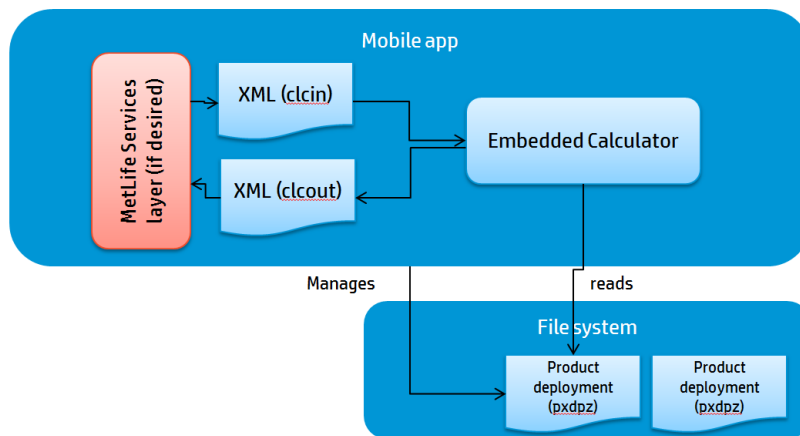
- Provide a fully functioning example of how to use the Android Calculator in a mobile app
- Easily test and extract performance and resource usage characteristics of the products that you deploy, for the device on which you will deploy your mobile app, prior to creating your own mobile app, to help with device selection and feasibility studies

## Overview of a mobile app

### Basic architecture of a mobile app using ProductXpress Calculator

ProductXpress Calculator on Android consists of a set of native libraries, together with jar files providing a JNI interface to the native libraries so that they can be easily used by java based Android applications.

Like other applications that embed ProductXpress Calculator, the mobile app loads the embedded Calculator library in-process:



The mobile app is fully controlling the products that are available to Calculator. The products need to be provided to Calculator as ProductXpress deployment packages. Synchronization of these packages, and ensuring that the right versions of products are available to the users of the mobile app is the responsibility of the mobile app.

### Typical mobile app flow

At a high level, the typical mobile app flow (also used by the sample application for Android) is as follows:

- **Initialize** Calculator
- **loadDeploymentPackage**: Load the deployment packages containing the products you want to be available in your mobile app
- **optimize**: Optimize the loaded deployment packages for performance (if this step is not taken, the optimization will happen when the first calculation is done, slowing down the first calculation)
- **calculate**: Send an XML message with the data for the policy for which you wish to calculate and/or evaluate rules, and receive back the results in result XML message

Obviously, the data that is sent to Calculator and the results that are returned from Calculator are managed by the mobile app.

## Runtime characteristics and device selection

### Runtime characteristics of Calculator

Calculator is a CPU-intensive application. This means that much of the performance of Calculator is determined by the speed of the CPU of the device in which it is running. Since there is a lot of variation in CPU speeds in mobile devices, it is recommended to test the products that you wish to deploy on a range of mobile devices

## **Device selection**

If you have the option of selecting the device on which Calculator will be deployed, then the sample application that is provided can be used to test the performance and resource usage for your own products across a selection of devices to help select the range of devices that will be chosen.