SMART DEVICE PROGRAMMING

6133

OPERATION OF ANDROID VIRTUAL DEVICE

- ✓ An Android Virtual Device (AVD) is a configuration that defines the characteristics of an Android phone, tablet, Wear OS, Android TV.
- ✓ The AVD Manager is an interface you can launch from Android Studio that helps you create and manage AVDs.
- ✓ An AVD contains a hardware profile, system image, storage area, skin, and other properties.

Hardware profile

- ✓ The hardware profile defines the characteristics of a device as shipped from the factory.
- ✓ The AVD Manager comes preloaded with certain hardware profiles, such as Pixel devices, and you can define or customize the hardware profiles as needed.

System image

- ✓ Each AVD includes an Android system image, which runs in that AVD.
- ✓ The AVD Manager includes some system images.
- ✓ And you can build custom AVD system images from your source code and create device emulations to run them.

Storage area

- ✓ The AVD has a dedicated storage area on your development machine.
- ✓ It stores the device user data, such as installed apps and settings, as well as an emulated SD card.

Skin

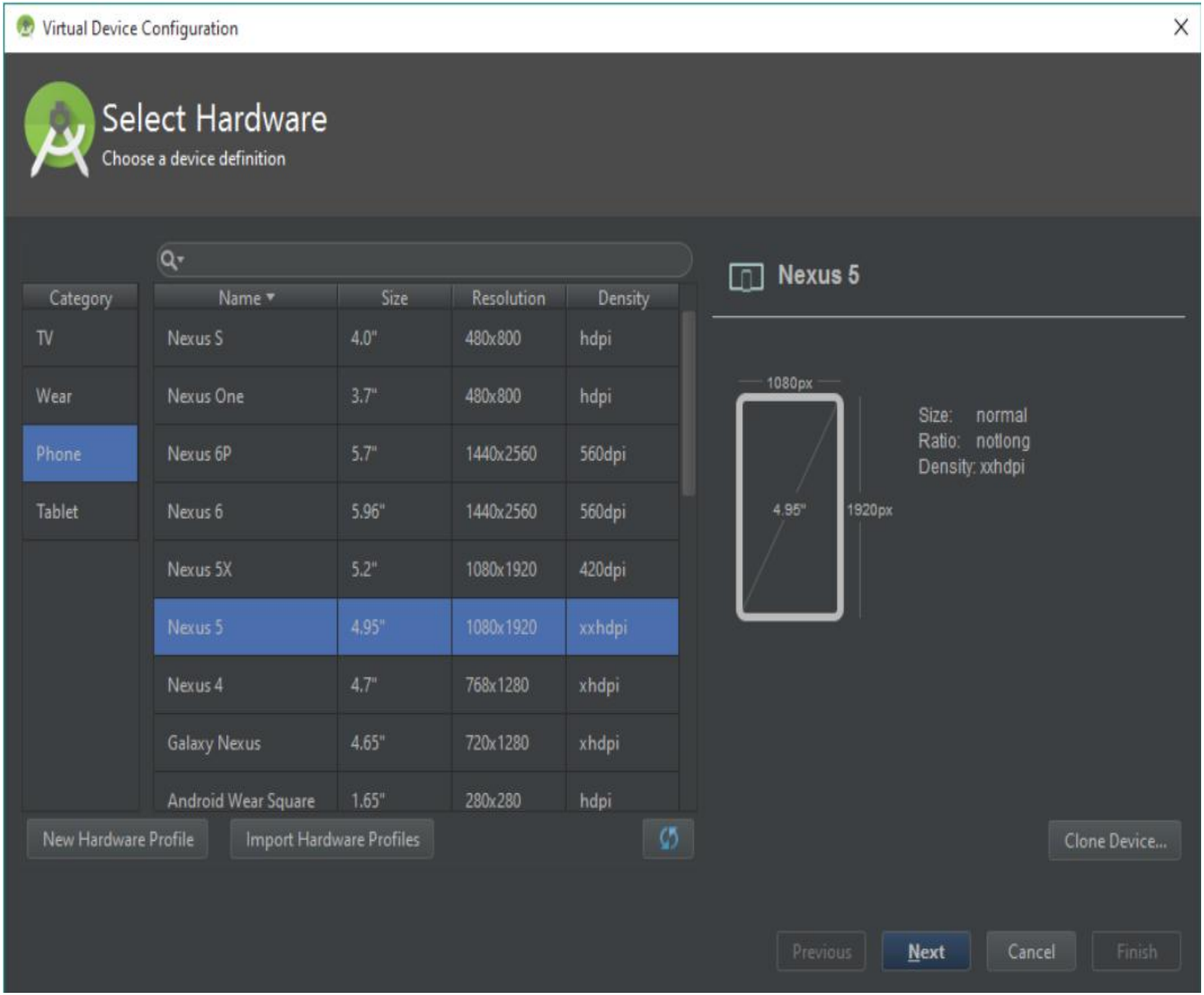
- ✓ An emulator skin specifies the appearance of a device.
- ✓ The AVD Manager provides some predefined skins. You can also define your own, or use skins provided by third parties.

Create a hardware profile

- ✓ The AVD Manager provides predefined hardware profiles for common devices so you can easily add them to your AVD definitions.
- ✓ If you need to define a different device, you can create a new hardware profile.
- ✓ You can define
    1. a new hardware profile from the beginning
    2. copy a hardware profile as a start

1. **To create a new hardware profile from the beginning**

- ✓ In the Select Hardware page, click New Hardware Profile.
- ✓ In the Configure Hardware Profile page, change the hardware profile properties as needed.
- ✓ Click Finish.


Virtual Device Configuration
Select Hardware
Choose a device definition
Category
Name
Size
Resolution
Density
TV
Wear
Phone
Tablet
Nexus S 4.0" 480x800 hdpi
Nexus One 3.7" 480x800 hdpi
Nexus 6P 5.7" 1440x2560 560dpi
Nexus 6 5.96" 1440x2560 560dpi
Nexus 5X 5.2" 1080x1920 420dpi
Nexus 5 4.95" 1080x1920 xxhdpi
Nexus 4 4.7" 768x1280 xhdpi
Galaxy Nexus 4.65" 720x1280 xhdpi
Android Wear Square 1.65" 280x280 hdpi
Nexus 5
1080px
4.95"
1920px
Size: normal
Ratio: notlong
Density: xxhdpi
New Hardware Profile
Import Hardware Profiles
Clone Device...
Previous
Next
Cancel
Finish

2. To create a hardware profile starting with a copy

- ✓ In the Select Hardware page, select a hardware profile and click Clone Device.
- ✓ Or right-click a hardware profile and select Clone.
- ✓ In the Configure Hardware Profile page, change the hardware profile properties as needed.
- ✓ Click Finish.

Edit existing hardware profiles

From the Select Hardware page, you can perform the following operations on an existing hardware profile:

- ✓ To edit a hardware profile, select it and click Edit Device. Or right-click a hardware profile and select Edit. Next, make your changes.
- ✓ To delete a hardware profile, right-click it and select Delete.

Import and export hardware profiles

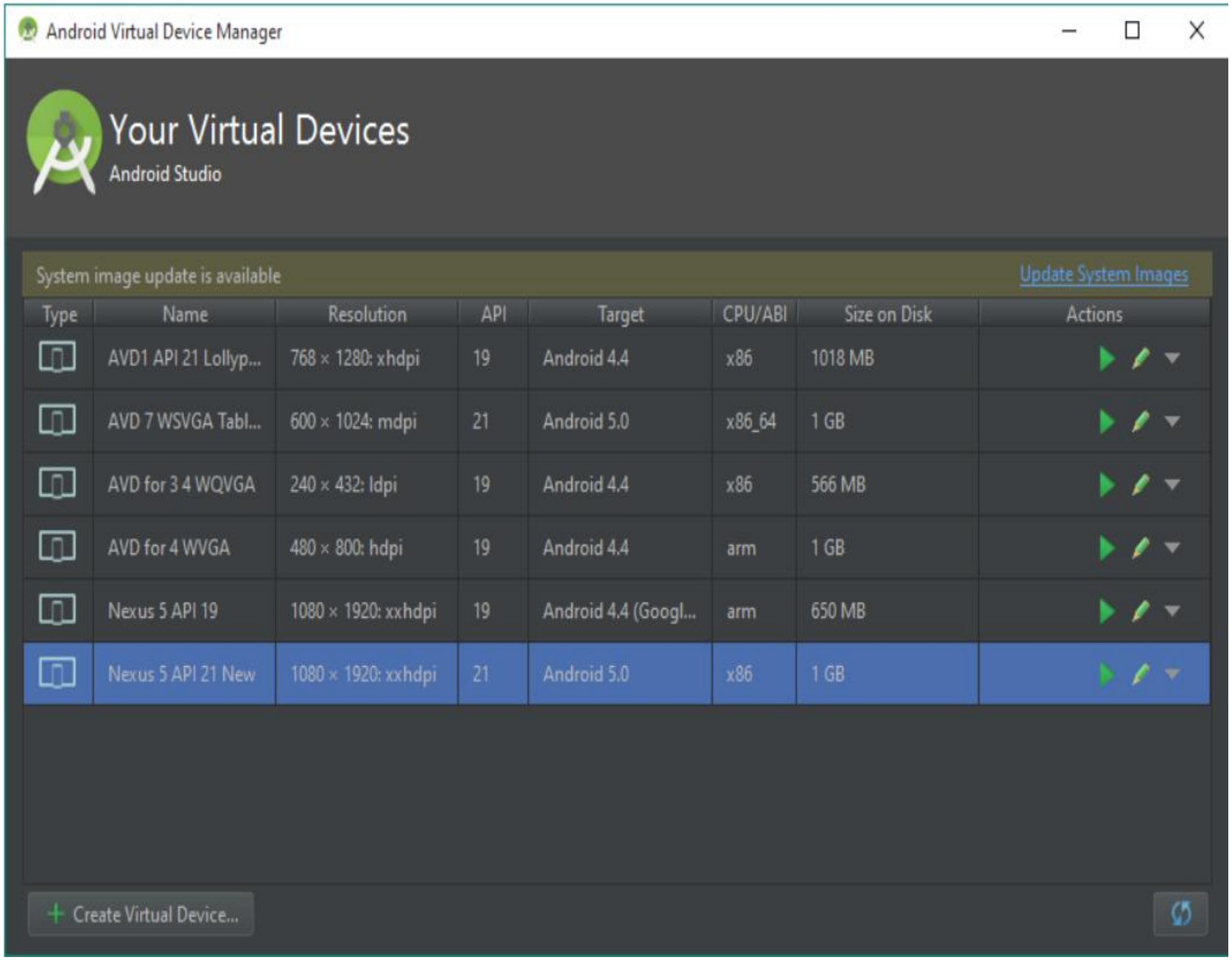
From the Select Hardware page, you can import and export hardware profiles:

- ✓ To import a hardware profile, click Import Hardware Profiles and select the XML file containing the definition on your computer.
- ✓ To export a hardware profile, right-click it and select Export. Specify the location where you want to store the XML file containing the definition.

Edit existing AVDs

From Your Virtual Devices page, you can perform the following operations on an existing AVD:

- ✓ To edit an AVD, click Edit this AVD  and make your changes.
- ✓ To delete an AVD, right-click an AVD and select Delete. Or click Menu ▼ and select Delete.
- ✓ To show the associated AVD .ini and .img files on disk, right-click an AVD and select Show on Disk. Or click Menu ▼ and select Show on Disk.
- ✓ To view AVD configuration details that you can include in any bug reports to the Android Studio team, right-click an AVD and select View Details. Or click Menu ▼ and select View Details.


Android Virtual Device Manager
Your Virtual Devices
Android Studio
System image update is available
Update System Images
Type
Name
Resolution
API
Target
CPU/ABI
Size on Disk
Actions
AVD1 API 21 Lollyp...
768 × 1280: xhdpi
19
Android 4.4
x86
1018 MB
AVD 7 WSVGA Tabl...
600 × 1024: mdpi
21
Android 5.0
x86_64
1 GB
AVD for 3 4 WQVGA
240 × 432: ldpi
19
Android 4.4
x86
566 MB
AVD for 4 WVGA
480 × 800: hdpi
19
Android 4.4
arm
1 GB
Nexus 5 API 19
1080 × 1920: xxhdpi
19
Android 4.4 (Googl...
arm
650 MB
Nexus 5 API 21 New
1080 × 1920: xxhdpi
21
Android 5.0
x86
1 GB
Create Virtual Device...

Run and stop an emulator, and clear data

From the Virtual Devices page, you can perform the following operations on an emulator:

- ✓ To run an emulator that uses an AVD, double-click the AVD. Or click Launch  .
- ✓ To stop a running emulator, right-click an AVD and select Stop. Or click Menu  and select Stop.
- ✓ To clear the data for an emulator, and return it to the same state as when it was first defined, right-click an AVD and select Wipe Data. Or click Menu  and select Wipe Data.