

The background features abstract, overlapping green geometric shapes, primarily triangles and polygons, in various shades of green, creating a modern and dynamic visual effect.

第六讲

ThingsBoard (III)

Lecture 6

ThingsBoard (III)

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声明

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ThingsBoard基本使用

ThingsBoard Basic Usage

第三步，创建仪表盘：

- 我们将创建一个仪表板并添加最受欢迎的小部件，以实现遥测数据的可视化：打开“仪表盘”页，单击右上角的“+”图标，选择“创建新仪表盘”。

The third step, Dashboard Creation:

- We will create a dashboard and add the most popular widgets to visualize the telemetry data: Open the Dashboards page. Click on the "+" icon in the top right corner. Select "Create new dashboard".

The screenshot displays the ThingsBoard web interface. On the left is a dark blue sidebar with navigation links: Home, Rule chains, Customers, Assets, Devices, Device profiles, Entity Views, Widgets Library, Dashboards (highlighted with a red arrow), and Audit Logs. The main content area is titled 'Dashboards' and shows a table of existing dashboards. In the top right corner of the main area, there is a '+' icon with a red arrow pointing to it. A dropdown menu is open, showing 'Create new dashboard' and 'Import dashboard' options. The table lists several demo dashboards, all created on 2020-11-26 at 11:10:17.

<input type="checkbox"/>	Created time ↓	Title	Assigned to customers	Public
<input type="checkbox"/>	2020-11-26 11:10:17	DHT22: Temperature & Humidity Demo Dashboard		<input type="checkbox"/>
<input type="checkbox"/>	2020-11-26 11:10:17	Raspberry PI GPIO Demo Dashboard		<input type="checkbox"/>
<input type="checkbox"/>	2020-11-26 11:10:17	LinkIt One GPS Tracking Demo Dashboard		<input type="checkbox"/>
<input type="checkbox"/>	2020-11-26 11:10:17	ESP8266 DHT22: Temperature & Humidity Demo Dashboard		<input type="checkbox"/>
<input type="checkbox"/>	2020-11-26 11:10:17	ESP8266 GPIO Demo Dashboard		<input type="checkbox"/>
<input type="checkbox"/>	2020-11-26 11:10:17	Arduino DHT22: Temperature & Humidity Demo Dashboard		<input type="checkbox"/>
<input type="checkbox"/>	2020-11-26 11:10:17	Temperature & Humidity Demo Dashboard		<input type="checkbox"/>

ThingsBoard基本使用

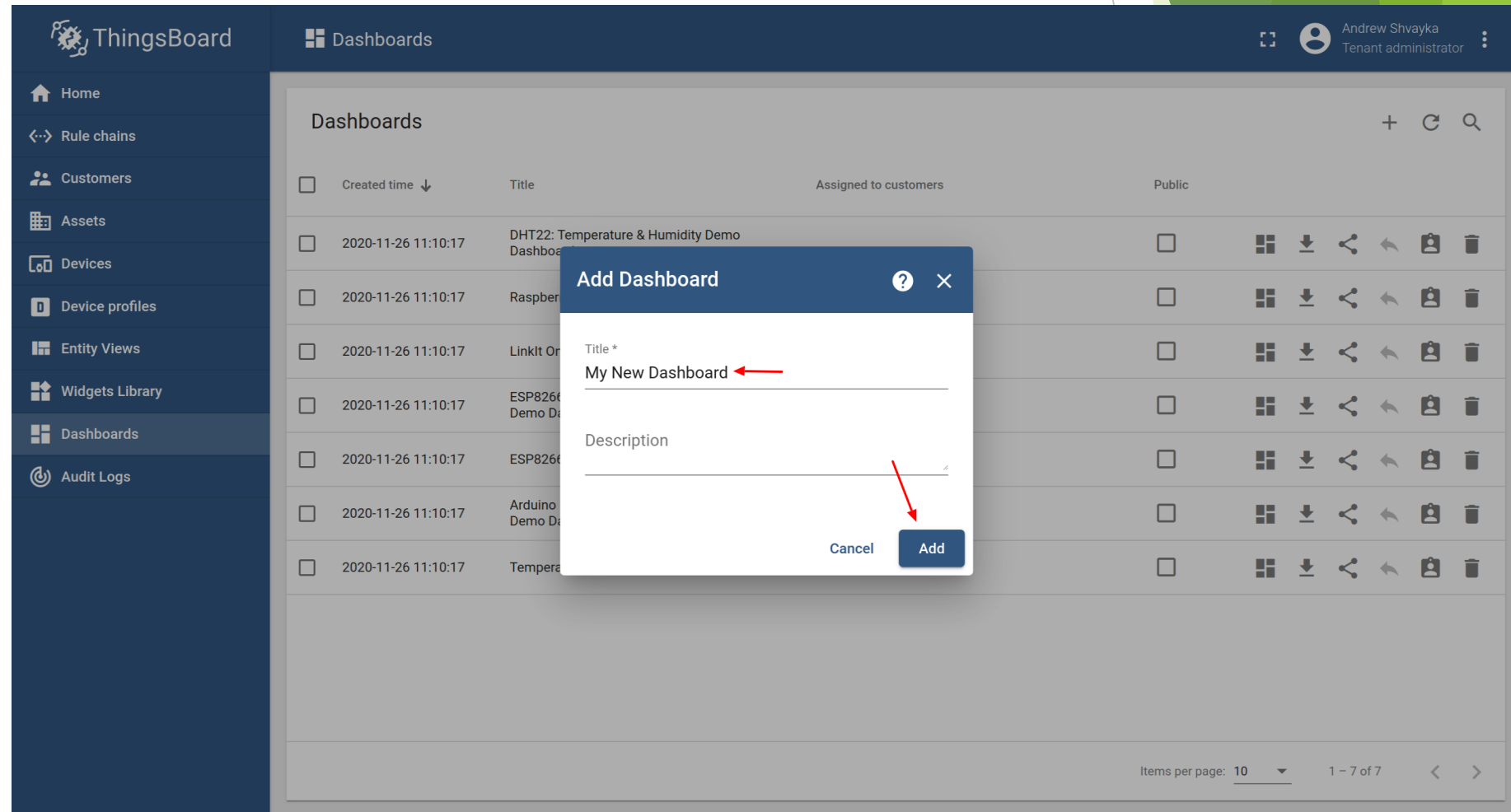
ThingsBoard Basic Usage

► 第三步，创建仪表盘：

- 输入仪表板名称。例如，“我的新仪表盘”，然后单击“添加”以添加仪表盘。

► The third step, Dashboard Creation:

- Input dashboard name. For example, "My New Dashboard". Then click "Add" to add the dashboard.



ThingsBoard基本使用

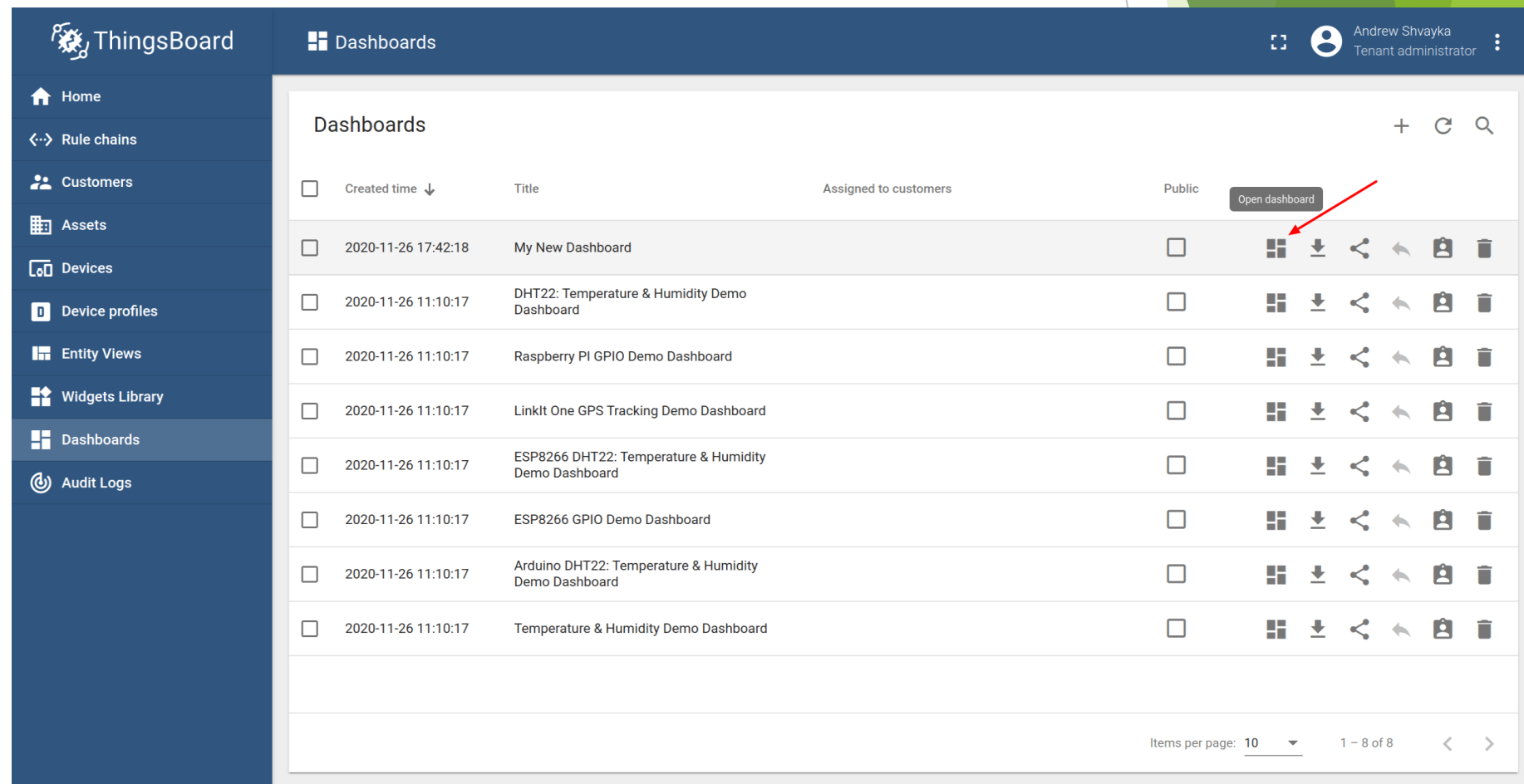
ThingsBoard Basic Usage

► 第三步，创建仪表盘：

- 现在，读者应该可以看到新建的仪表盘，因为默认情况下，该表使用创建时间对仪表盘进行排序。单击“打开仪表盘”图标。

► The third step, Dashboard Creation:

- Now you should see your newly created dashboard, since the table sorts dashboards using the time of the creation by default. Click on the "Open dashboard" icon.



The screenshot shows the ThingsBoard web interface. On the left is a dark blue sidebar with navigation links: Home, Rule chains, Customers, Assets, Devices, Device profiles, Entity Views, Widgets Library, Dashboards (selected), and Audit Logs. The main content area is titled 'Dashboards' and displays a table of created dashboards. The table has columns for checkboxes, 'Created time' (sorted descending), 'Title', 'Assigned to customers', 'Public', and a set of action icons. A red arrow points to the 'Open dashboard' icon (a square with a grid pattern) in the first row, which corresponds to 'My New Dashboard'.

<input type="checkbox"/>	Created time ↓	Title	Assigned to customers	Public	Actions
<input type="checkbox"/>	2020-11-26 17:42:18	My New Dashboard		<input type="checkbox"/>	[Open dashboard] [Download] [Share] [Refresh] [Settings] [Delete]
<input type="checkbox"/>	2020-11-26 11:10:17	DHT22: Temperature & Humidity Demo Dashboard		<input type="checkbox"/>	[Open dashboard] [Download] [Share] [Refresh] [Settings] [Delete]
<input type="checkbox"/>	2020-11-26 11:10:17	Raspberry PI GPIO Demo Dashboard		<input type="checkbox"/>	[Open dashboard] [Download] [Share] [Refresh] [Settings] [Delete]
<input type="checkbox"/>	2020-11-26 11:10:17	LinkIt One GPS Tracking Demo Dashboard		<input type="checkbox"/>	[Open dashboard] [Download] [Share] [Refresh] [Settings] [Delete]
<input type="checkbox"/>	2020-11-26 11:10:17	ESP8266 DHT22: Temperature & Humidity Demo Dashboard		<input type="checkbox"/>	[Open dashboard] [Download] [Share] [Refresh] [Settings] [Delete]
<input type="checkbox"/>	2020-11-26 11:10:17	ESP8266 GPIO Demo Dashboard		<input type="checkbox"/>	[Open dashboard] [Download] [Share] [Refresh] [Settings] [Delete]
<input type="checkbox"/>	2020-11-26 11:10:17	Arduino DHT22: Temperature & Humidity Demo Dashboard		<input type="checkbox"/>	[Open dashboard] [Download] [Share] [Refresh] [Settings] [Delete]
<input type="checkbox"/>	2020-11-26 11:10:17	Temperature & Humidity Demo Dashboard		<input type="checkbox"/>	[Open dashboard] [Download] [Share] [Refresh] [Settings] [Delete]

At the bottom right of the dashboard list, there is a pagination control showing 'Items per page: 10' and '1 - 8 of 8'.

ThingsBoard基本使用

ThingsBoard Basic Usage

► 第三步，创建仪表盘：

- 在通过创建小部件进行数据可视化之前，需要创建实体别名。别名是对小部件中使用的单个实体或实体组的引用。别名可以是静态的，也可以是动态的。为简单起见，我们将使用“单个实体”别名引用唯一的实体（在本例中为“我的新设备”或其他用户在创建时起的名称）。可以配置引用多个设备的别名。例如，特定类型或与特定资产相关的设备。
- 别名用于定义将使用的实体的数据。

► The third step, Dashboard Creation:

- To visualize the data via adding widgets, we need to create entity alias first. Alias is a reference to a single entity or group of entities that are used in the widgets. Alias may be static or dynamic. For simplicity, we will use “Single entity” alias references the one and only entity (“My New Device” or any other name during creation in our case). It is possible to configure an alias that references multiple devices. For example, devices of a certain type or related to a certain asset.
- Aliases are to define the data from which the entities will be used.

ThingsBoard基本使用

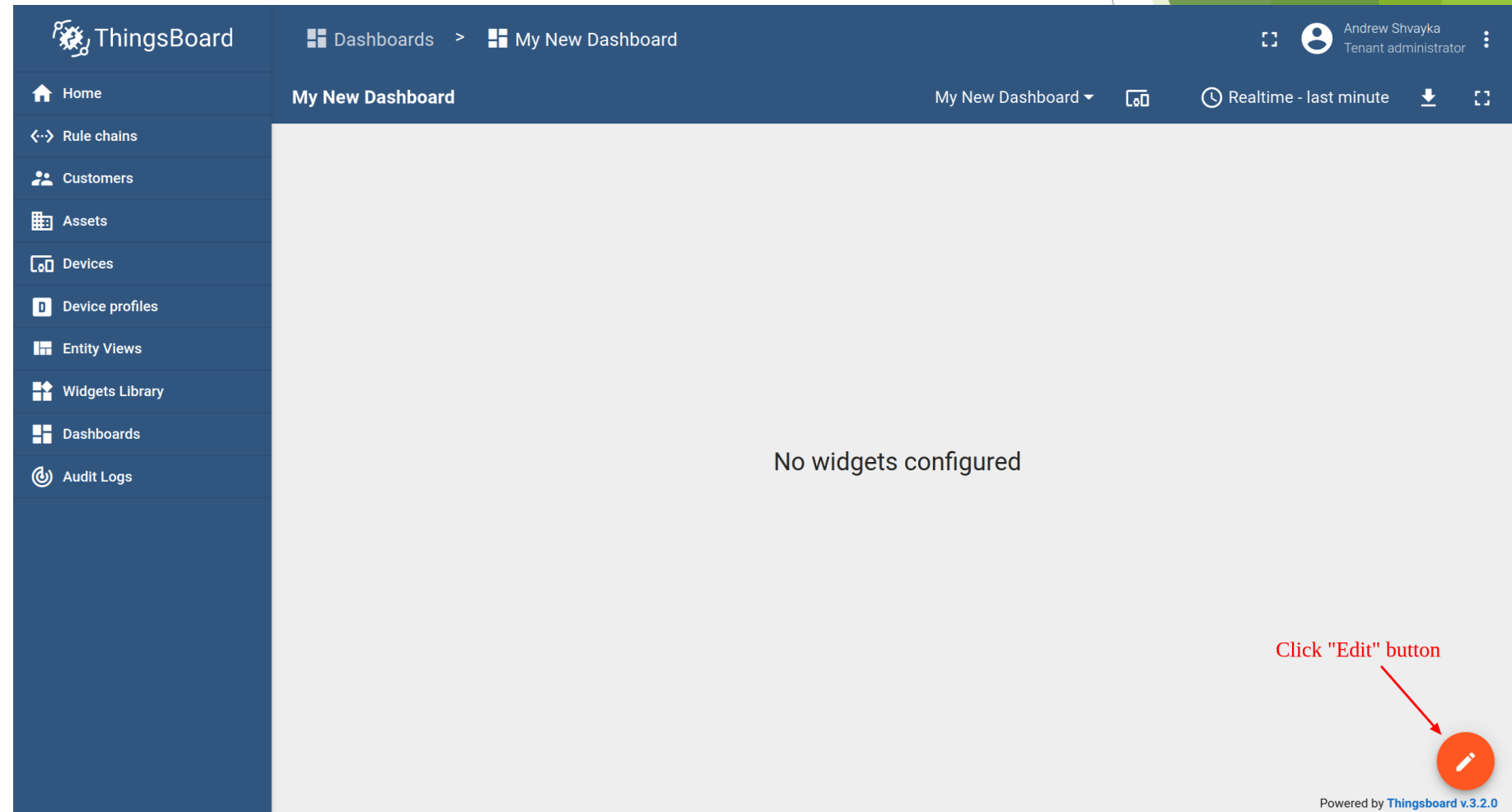
ThingsBoard Basic Usage

▶ 第三步，创建仪表盘：

- ▶ 进入编辑模式。单击右下角的铅笔按钮。

▶ The third step, Dashboard Creation:

- ▶ Enter edit mode. Click on the pencil button in the bottom right corner.



ThingsBoard基本使用

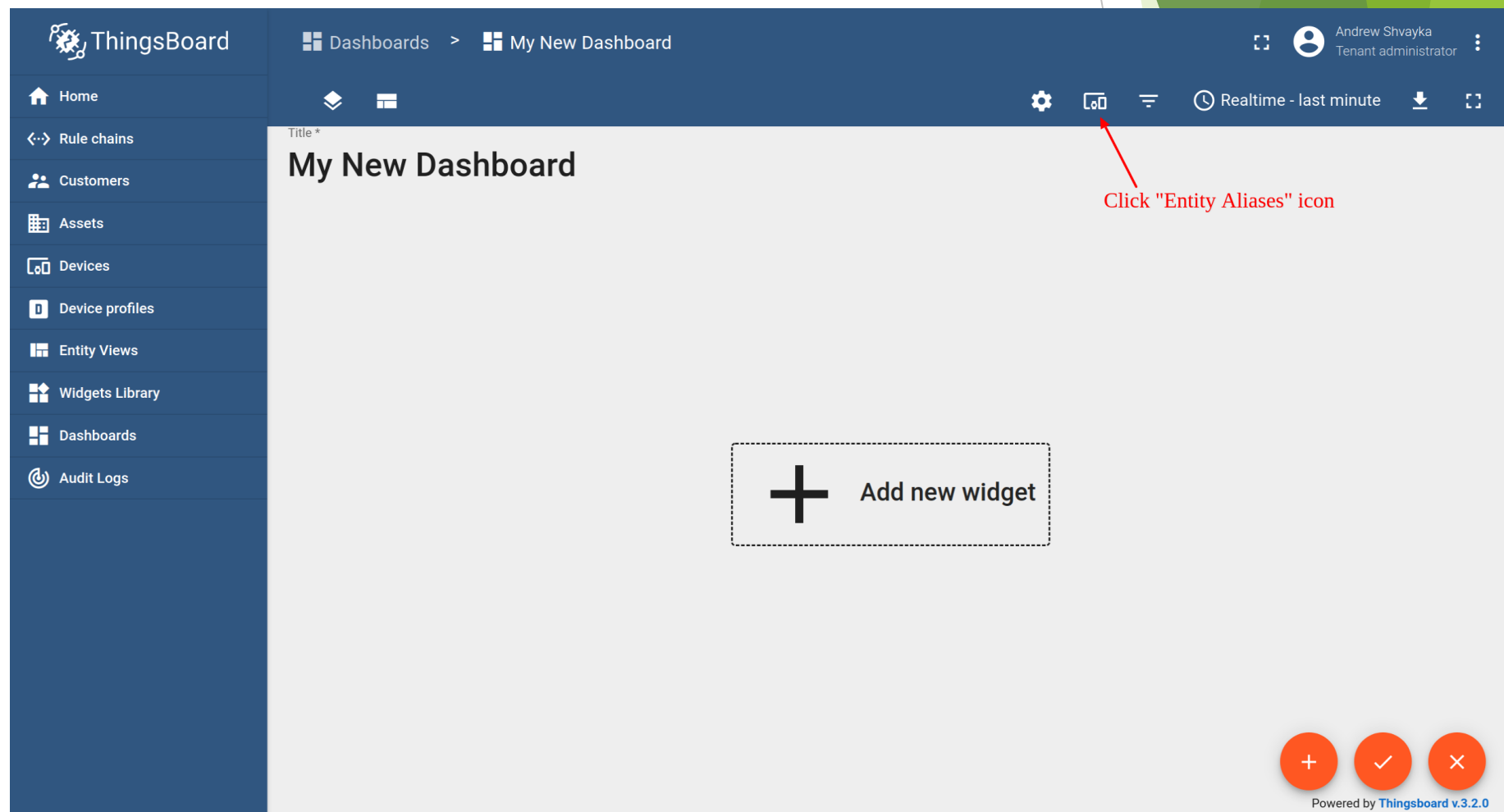
ThingsBoard Basic Usage

► 第三步，创建仪表盘：

- 单击屏幕右上角的“实体别名”图标。您将看到实体别名的空列表。

► The third step, Dashboard Creation:

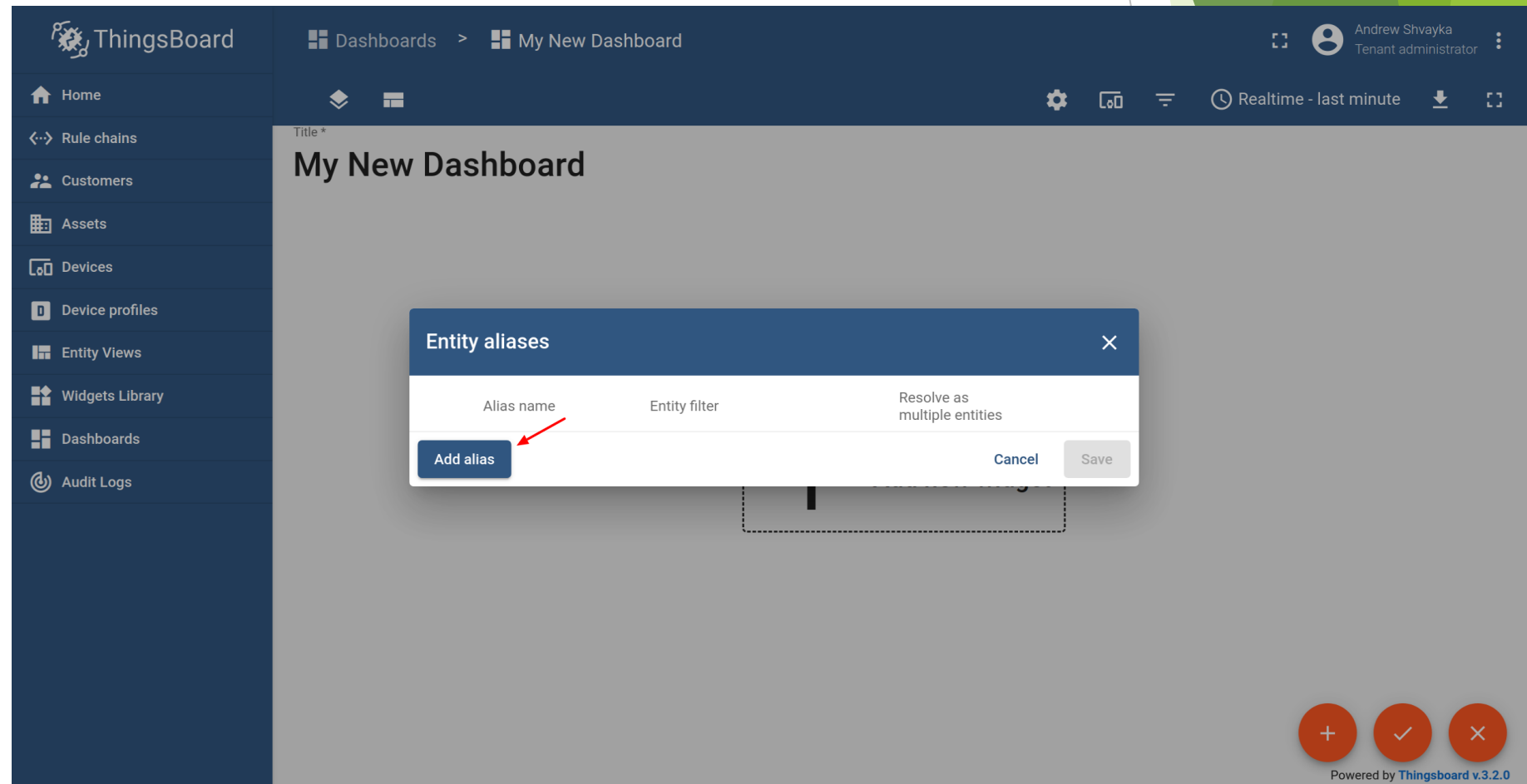
- Click the "Entity Aliases" icon in the top right part of the screen. You will see an empty list of Entity aliases.



ThingsBoard基本使用

ThingsBoard Basic Usage

- ▶ 第三步，创建仪表盘：
 - ▶ 单击“添加别名”。
- ▶ The third step, Dashboard Creation:
 - ▶ Click "Add alias".



ThingsBoard基本使用

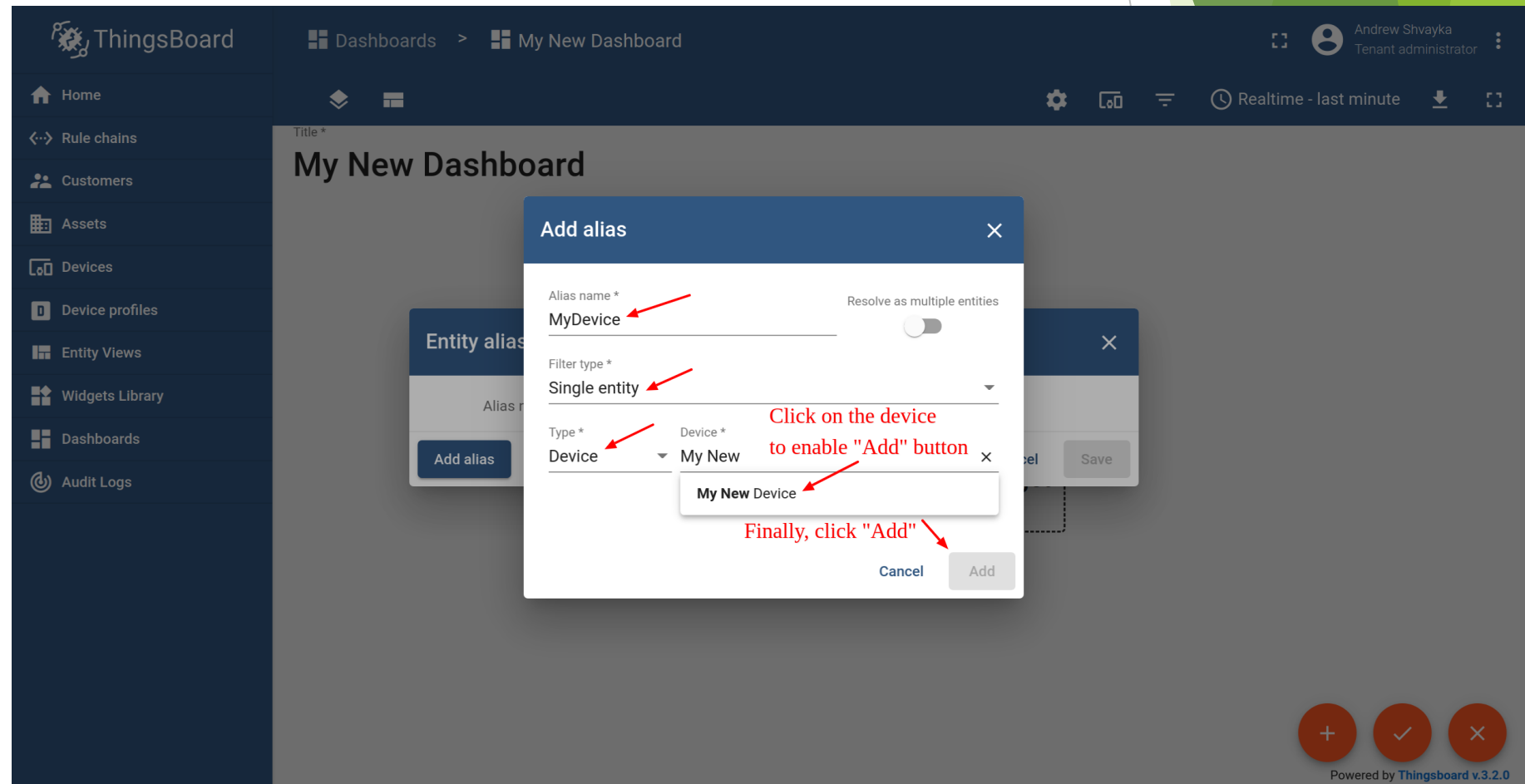
ThingsBoard Basic Usage

► 第三步，创建仪表盘：

- 输入别名，例如“MyDevice”。选择“单个实体”筛选器类型。选择“设备”作为类型，然后键入相应设备。

► The third step, Dashboard Creation:

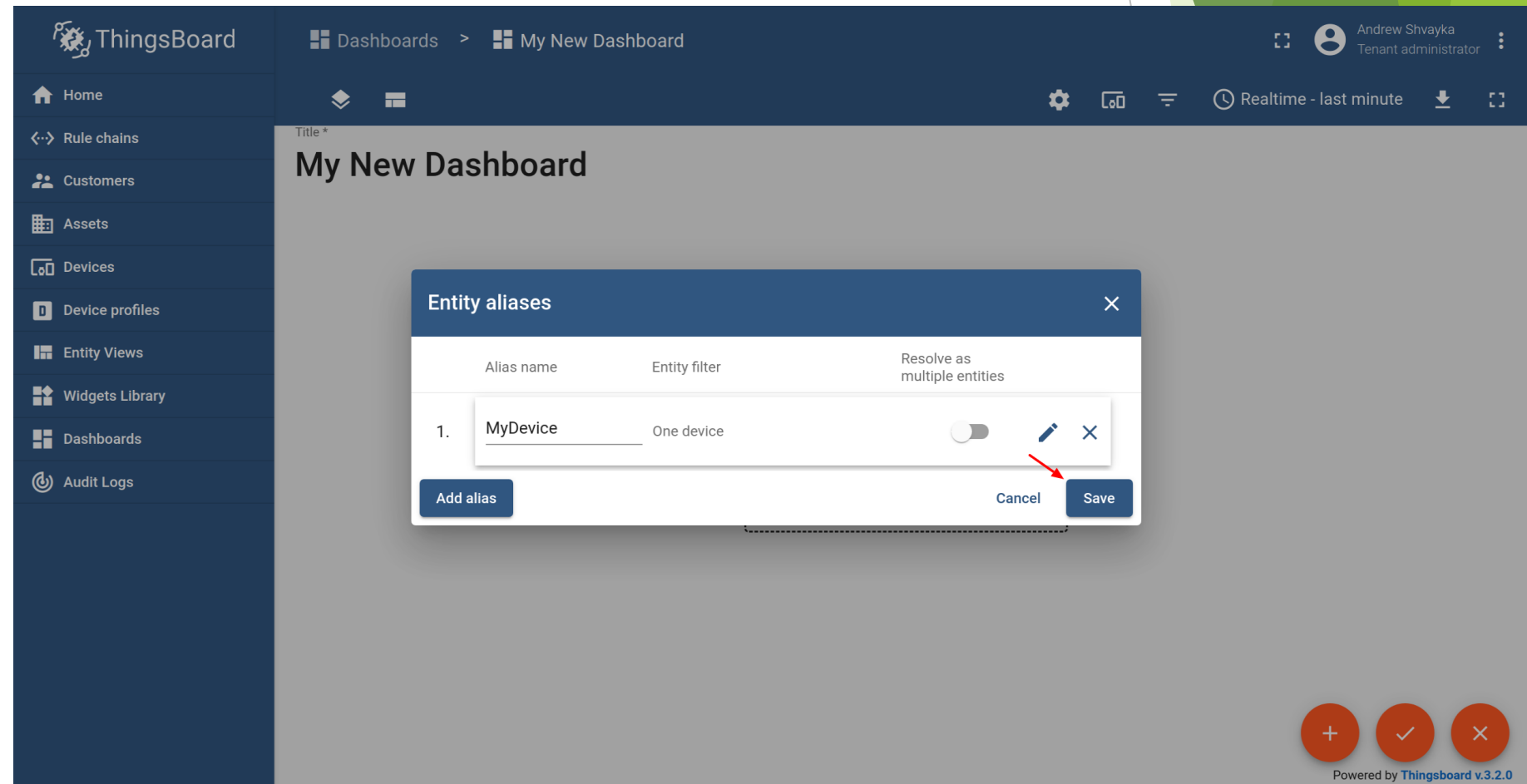
- Input alias name, for example, “MyDevice”. Select the “Single entity” Filter type. Select “Device” as Type and type the corresponding device.



ThingsBoard基本使用

ThingsBoard Basic Usage

- ▶ 第三步，创建仪表盘：
 - ▶ 单击“添加”，然后单击“保存”。
- ▶ The third step, Dashboard Creation:
 - ▶ Click "Add" and then "Save".



ThingsBoard基本使用

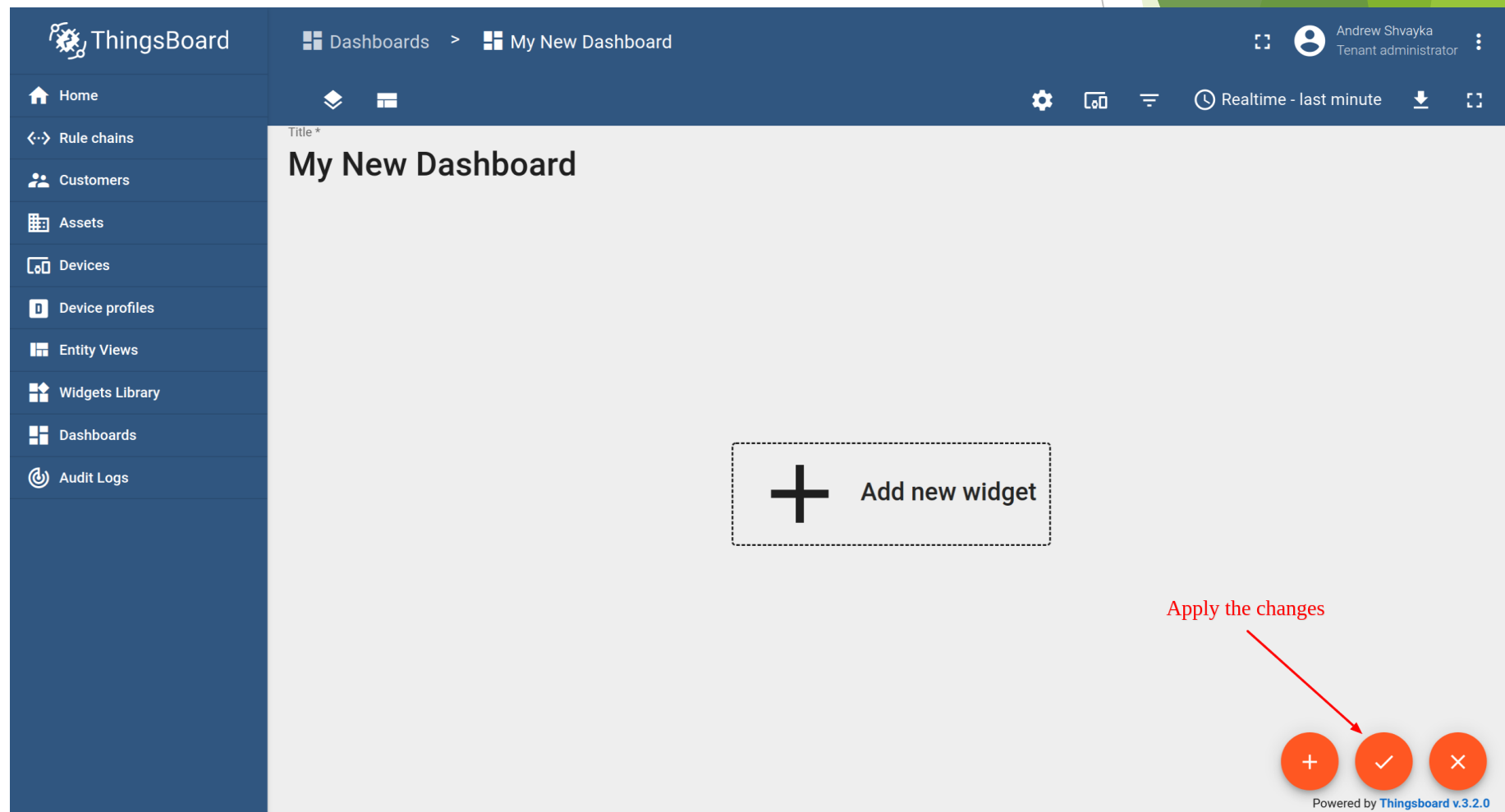
ThingsBoard Basic Usage

► 第三步，创建仪表盘：

- 最后，单击仪表板编辑器中的“应用更改”以保存更改。然后，您应该再次进入编辑模式。

► The third step, Dashboard Creation:

- Finally, click "Apply changes" in the dashboard editor to save the changes. Then you should enter edit mode again.



ThingsBoard基本使用

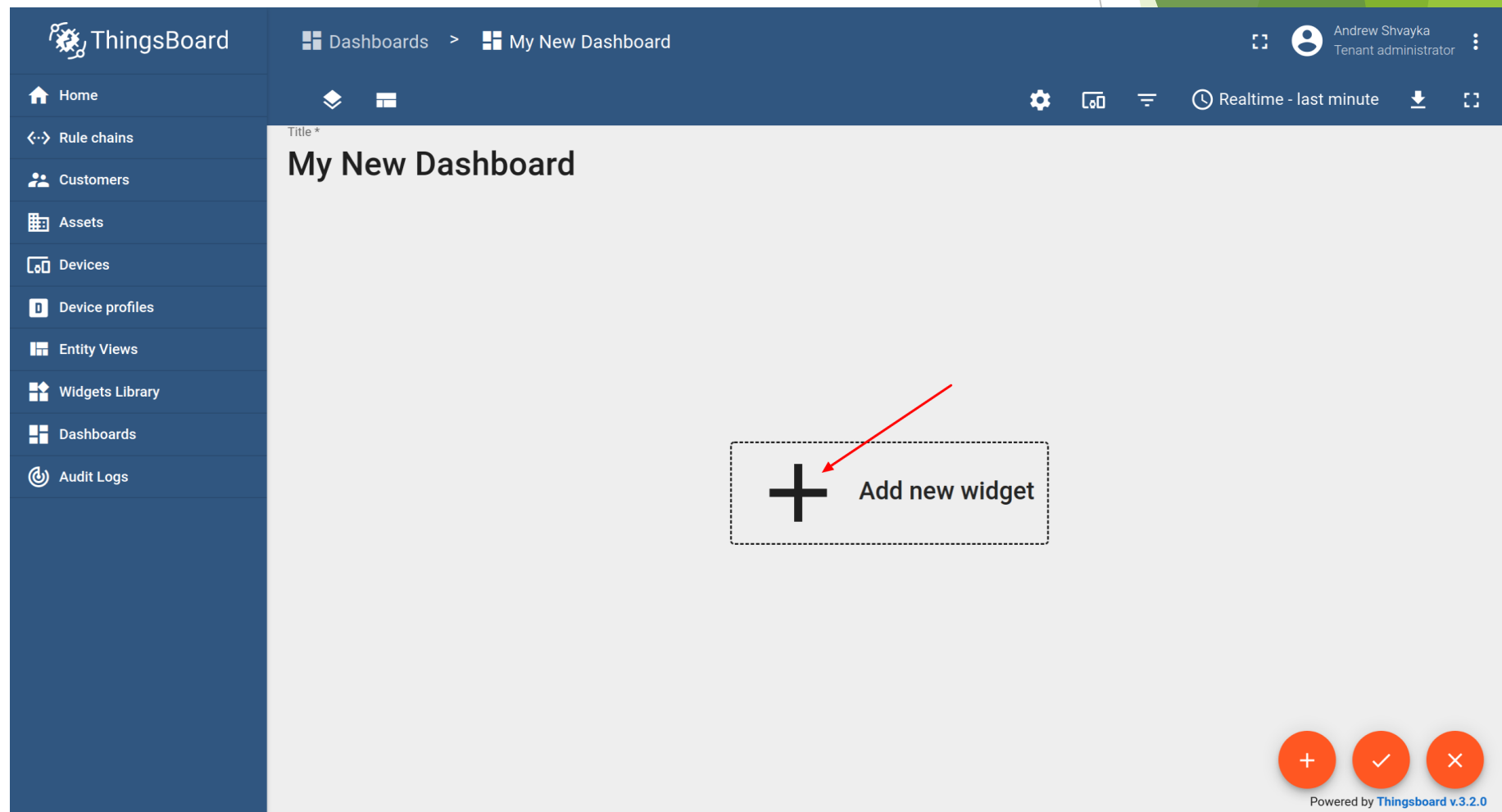
ThingsBoard Basic Usage

► 第三步，创建仪表盘：

- 要添加表格小部件，我们需要从小部件库中选择它。进入编辑模式。单击“添加新小部件”按钮。

► The third step, Dashboard Creation:

- To add the table widget we need to select it from the widget library. Enter edit mode. Click on the "Add new widget" button.



ThingsBoard基本使用

ThingsBoard Basic Usage

► 第三步，创建仪表盘：

- 选择“卡片”小部件库。读者可以通过搜索，搜索相应的小部件库。

► The third step, Dashboard Creation:

- Select the "Cards" widget bundle. Users can also search the widget bundle via searching.

The screenshot shows the ThingsBoard interface with the 'Select widgets bundle' dialog open. The left sidebar contains navigation links: Home, Rule chains, Customers, Assets, Devices, Device profiles, OTA updates, Entity Views, Edge instances, Edge management, Widgets Library, Dashboards, Audit Logs, and System Settings. The dialog displays several widget bundles: Alarms, Alarm widgets, Analogue gauges, Charts, Cards, and Control widgets. The 'Cards' bundle is highlighted with a red box. Red arrows point from the text 'Select the "Cards" widget bundle' and 'Search the widget bundle' to the search icon and the 'Cards' bundle respectively.

Alarms

Type	Severity	Status
Temperature	Major	Cleared
Temperature	Critical	Cleared
Low Humidity	Warning	Active
Low Humidity	Warning	Active

Alarm widgets
System
Visualization of alarms for devices/assets and other entities.

Analogue gauges
System
Display temperature, humidity, speed, and other latest values on various analog gauge widgets.

Charts
System
Display timeseries data using customizable line and bar charts. Use various pie charts to display latest values.

Cards
System
Tables and cards to display latest and historical values for multiple entities simultaneously.

Name	Charged, %	Time	Humidity, %
Arduino	99.6	10:48:15	61.2
Linux SE	37.2	10:48:14	64.8

Your HTML code here

Control widgets
System
Send commands to devices.

Date
System
Contains widgets to change the data range for other widgets on the dashboard.

ThingsBoard基本使用

ThingsBoard Basic Usage

- ▶ 第三步，创建仪表盘：
 - ▶ 从“卡片”小部件库选择“简单卡片”。
- ▶ The third step, Dashboard Creation:
 - ▶ Select the “Simple Cards” from the “Cards” widget bundle.

The screenshot shows the ThingsBoard dashboard creation interface. On the left is a sidebar with navigation options: Home, Rule chains, Customers, Assets, Devices, Device profiles, OTA updates, Entity Views, Edge Instances, Edge management, Widgets Library, Dashboards, Audit Logs, Api Usage, and System Settings. The main area displays a dashboard titled 'Virutal Temperature S' with a 'Cards: select widget' dialog open. The dialog shows a grid of widget options. The 'Simple card' widget is highlighted with a red box and a red arrow pointing to it from the text 'Select the “Simple Cards” widget'. Other visible widgets include 'Your background image', 'HTML Value Card', 'HTML Card', and 'Timeseries table'.

Time	Humidity	Temper..
10:48:15	59.3	45.6
10:48:14	61.2	52
10:48:13	64.5	37

ThingsBoard基本使用

ThingsBoard Basic Usage

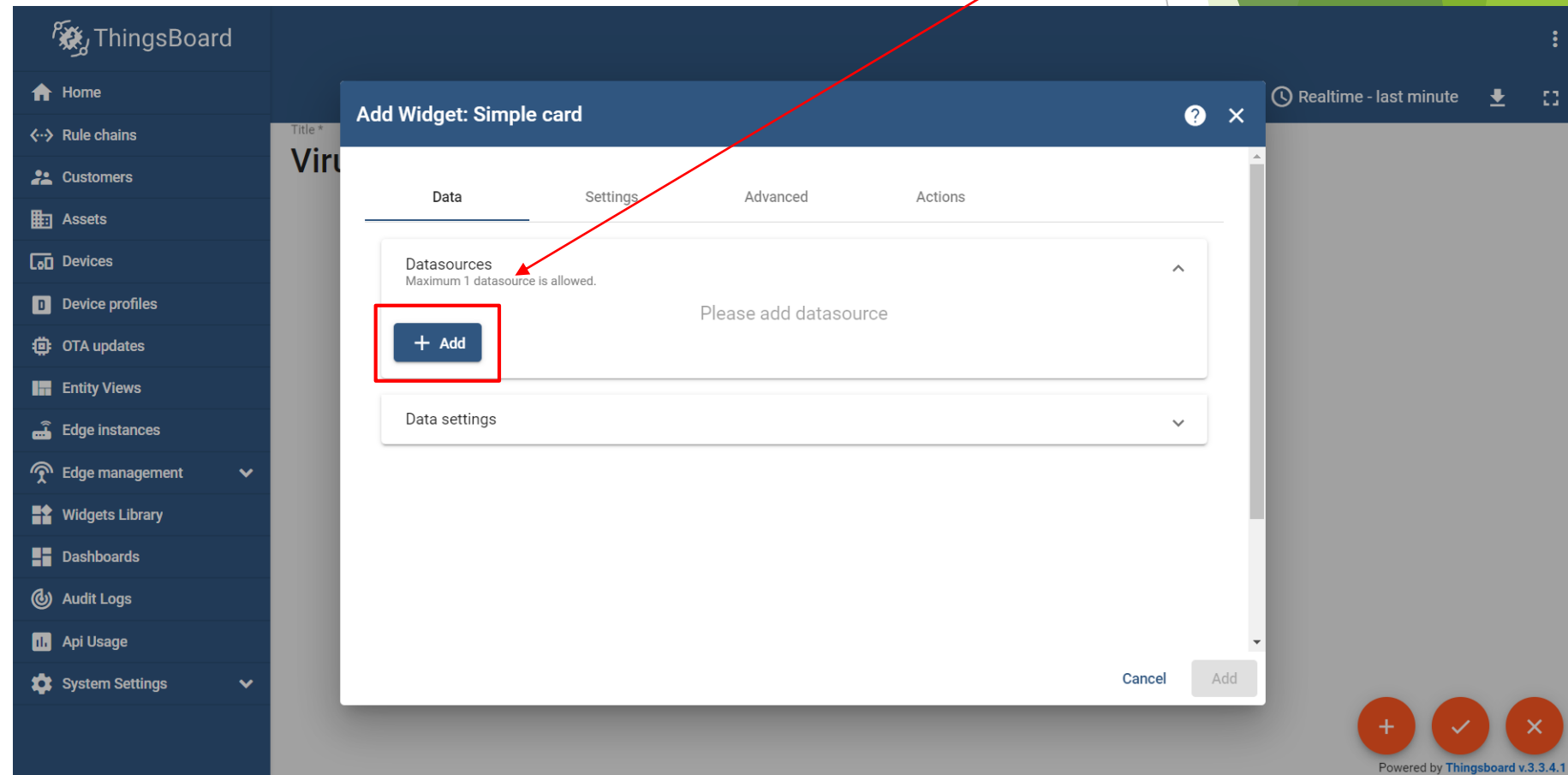
► 第三步，创建仪表盘：

- 每个小组件都有一个数据源，这就是为什么小部件“知道”要显示哪些数据。单击“添加”以添加和配置数据源。

► The third step, Dashboard Creation:

- Each widget has a data source. This is how the widget “knows” what data to display. Click "Add" to add and configure the data source.

Click "Add" to add and configure the data source



ThingsBoard基本使用

ThingsBoard Basic Usage

► 第三步，创建仪表盘：

- 选择 “MyDevice” 或用
户自己命名的实体别名。
然后单击右侧的输入字
段。将显示可用数据点
的自动完成。选择 “温
度” 数据点，然后单击
“添加”。

► The third step, Dashboard Creation:

- Select "MyDevice" or the
user named entity alias.
Then click on the input
field on the right. The
auto-complete with
available data points will
appear. Select
"temperature" data point
and click "Add".

The screenshot shows the ThingsBoard 'Add Widget' dialog box. The 'Data' tab is selected, displaying a table with columns 'Type' and 'Parameters'. A dropdown menu is open for the 'Entity' type, showing a list of available data points: 'temperature', 'active', 'inactivityAlarmTime', 'lastActivityTime', 'lastConnectTime', and 'lastDisconnectTime'. Red arrows point to the 'temperature' data point and the 'Add' button. The background shows the ThingsBoard dashboard interface with a sidebar and a top navigation bar.

Type	Parameters
1. Entity	Entity alias * MyDevice Filter

Click here to see all available data points

Click "temperature" data source

temperature
active
inactivityAlarmTime
lastActivityTime
lastConnectTime
lastDisconnectTime

Cancel Add

ThingsBoard基本使用

ThingsBoard Basic Usage

► 第三步，创建仪表盘：

- 调整小部件的大小以使其更大一些。只需拖动小部件的右下角即可。如果您想编辑小部件，也可以使用高级设置。

► The third step, Dashboard Creation:

- Resize the widget to make it a little bigger. Just drag the bottom right corner of the widget. You can also play with the advanced settings if you would like to edit the widget.

The screenshot shows the ThingsBoard web interface. On the left is a dark blue sidebar with navigation links: Home, Rule chains, Customers, Assets, Devices, Device profiles, Entity Views, Widgets Library, Dashboards, and Audit Logs. The main area has a top header with 'Dashboards > My New Dashboard' and a user profile for 'Andrew Shvayka, Tenant administrator'. Below the header is a toolbar with icons for settings, fullscreen, list view, and a clock showing 'Realtime - last minute'. The main content area is a light gray grid with a widget titled 'My New Dashboard' (with a subtitle 'Title *'). The widget is a table with the title 'Entities' and a table of data. A red arrow points to the bottom right corner of the widget with the text 'Drag the corner to resize the widget.' In the bottom right corner of the grid, there are three red circular buttons: a plus sign (+), a checkmark (✓), and a close sign (✕). A red arrow points to the checkmark button with the text 'Save the dashboard'. At the very bottom right, it says 'Powered by Thingsboard v.3.2.0'.

Entity name ↑	Entity type	temperature
My New Device	Device	25

1 - 1 of 1
Items per page: 10

ThingsBoard基本使用

ThingsBoard Basic Usage

第三步，创建仪表盘：

- 下一步，我们继续添加图表小部件，我们需要从小部件库中选择它。图表小部件显示同一数据键的多个历史值。首先，我们进入“编辑”模式。

The third step, Dashboard Creation:

- Next, we add the chart widget. We need to select it from the widget library. Chart widget displays multiple historical values of the same data key. Now we enter the Edit mode.

ThingsBoard

Dashboards > My New Dashboard

Andrew Shvayka
Tenant administrator

My New Dashboard

My New Device

Realtime - last minute

Entities

Entity name ↑	Entity type	temperature
My New Device	Device	25

Items per page: 10 1 - 1 of 1

Enter edit mode

Enter edit mode

Powered by Thingsboard v.3.2.0

ThingsBoard基本使用

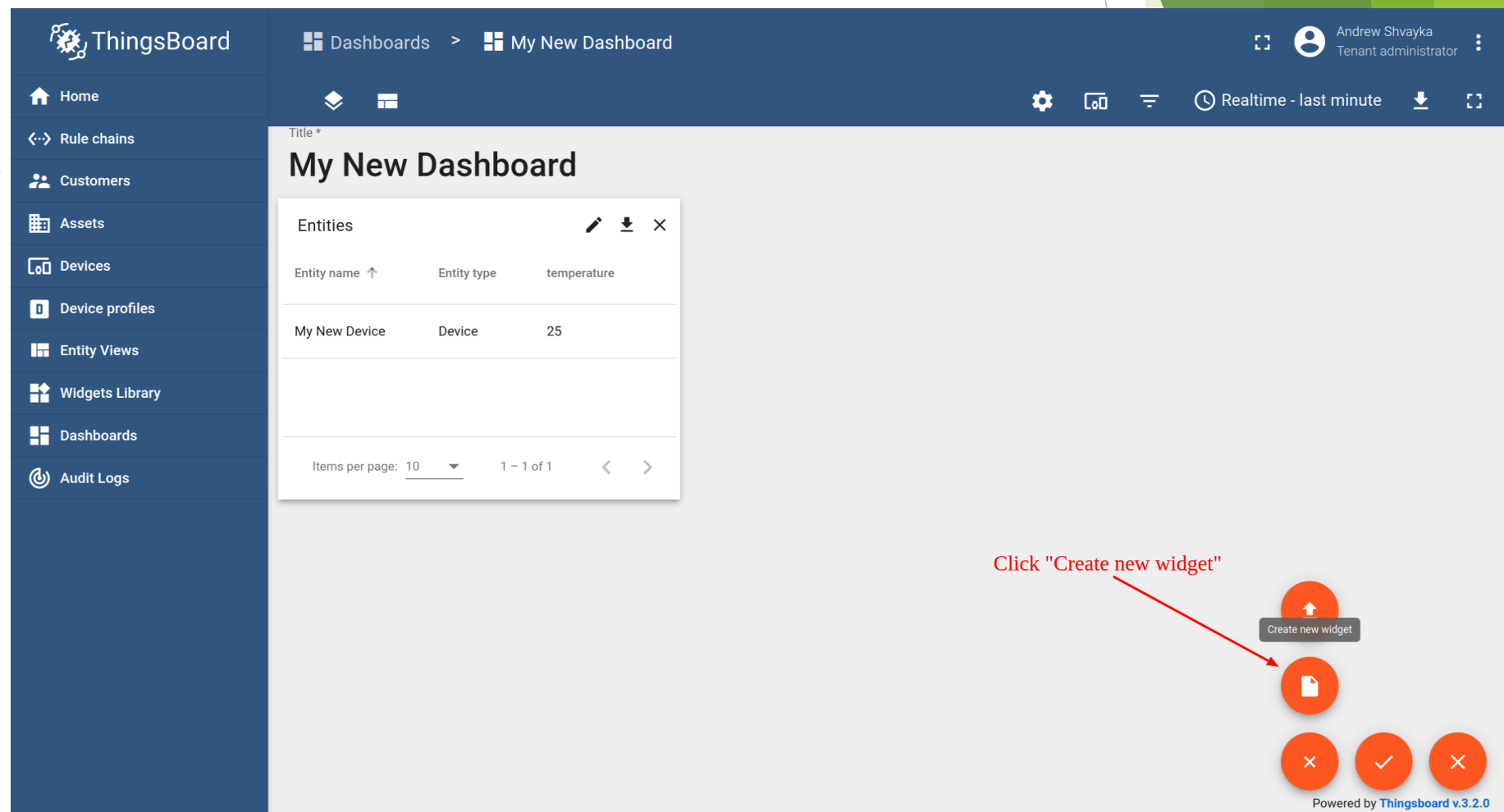
ThingsBoard Basic Usage

► 第三步，创建仪表盘：

- 单击屏幕右下角的“添加新小部件”图标，然后单击“创建新小部件”图标。。

► The third step, Dashboard Creation:

- Click the "Add new widget" icon in the bottom right corner of the screen. Then click the "Create new widget" icon.



The screenshot shows the ThingsBoard interface. The left sidebar contains navigation links: Home, Rule chains, Customers, Assets, Devices, Device profiles, Entity Views, Widgets Library, Dashboards, and Audit Logs. The main area displays a table of entities for 'My New Dashboard'.

Entity name	Entity type	temperature
My New Device	Device	25

At the bottom right, there is a 'Create new widget' button with an upward arrow icon. A red arrow points to this button with the text 'Click "Create new widget"'. Below this button are three circular icons: a close icon (X), a checkmark icon, and a delete icon (X).

Powered by Thingsboard v.3.2.0

ThingsBoard基本使用

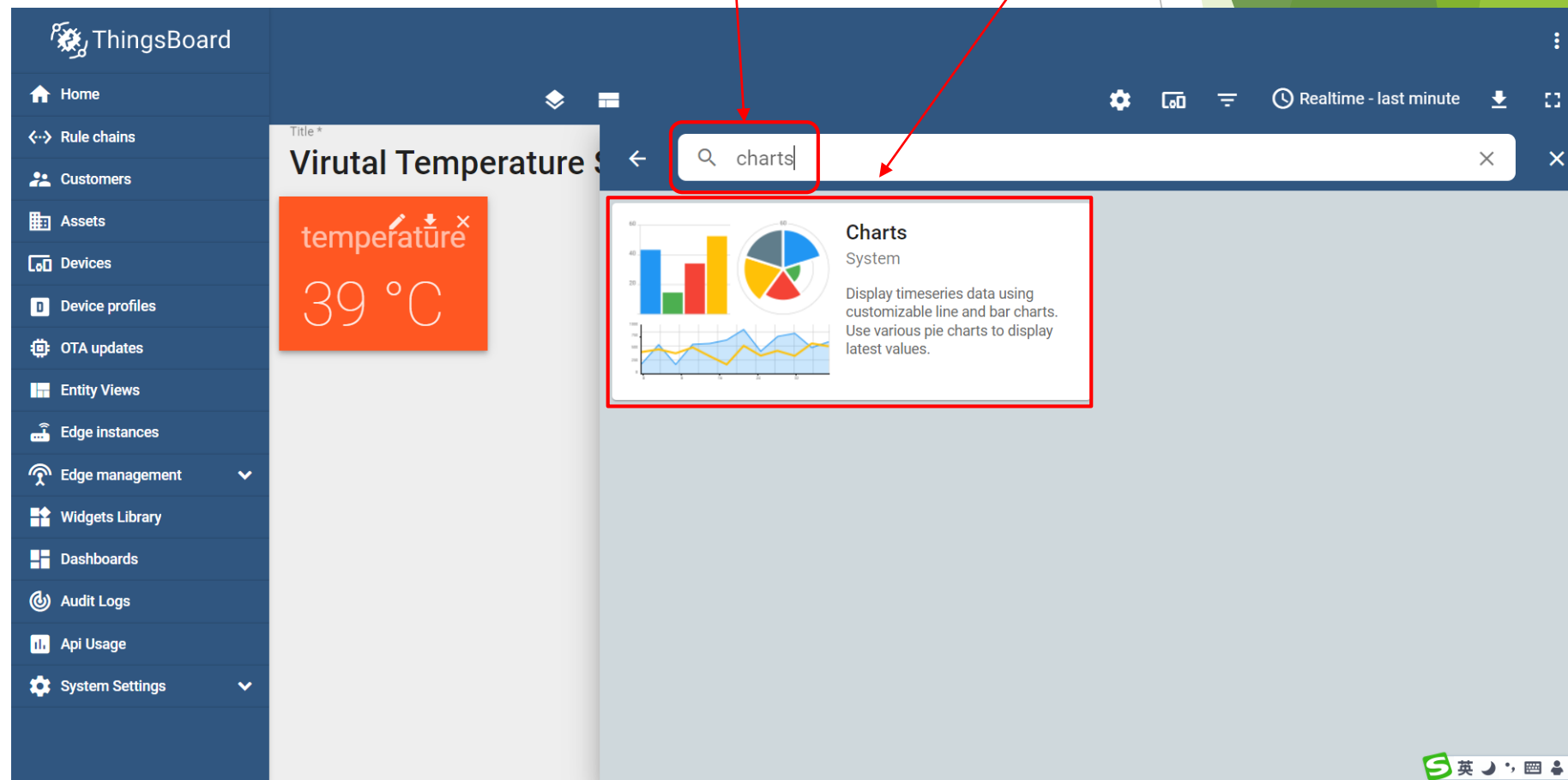
ThingsBoard Basic Usage

► 第三步，创建仪表盘：

- 选择“卡片”小部件库。读者可以通过搜索，搜索相应的小部件库。这里我们搜索图表小部件。

► The third step, Dashboard Creation:

- Select the "Cards" widget bundle. Users can also search the widget bundle via searching. We search the Charts widget here.



ThingsBoard基本使用

ThingsBoard Basic Usage

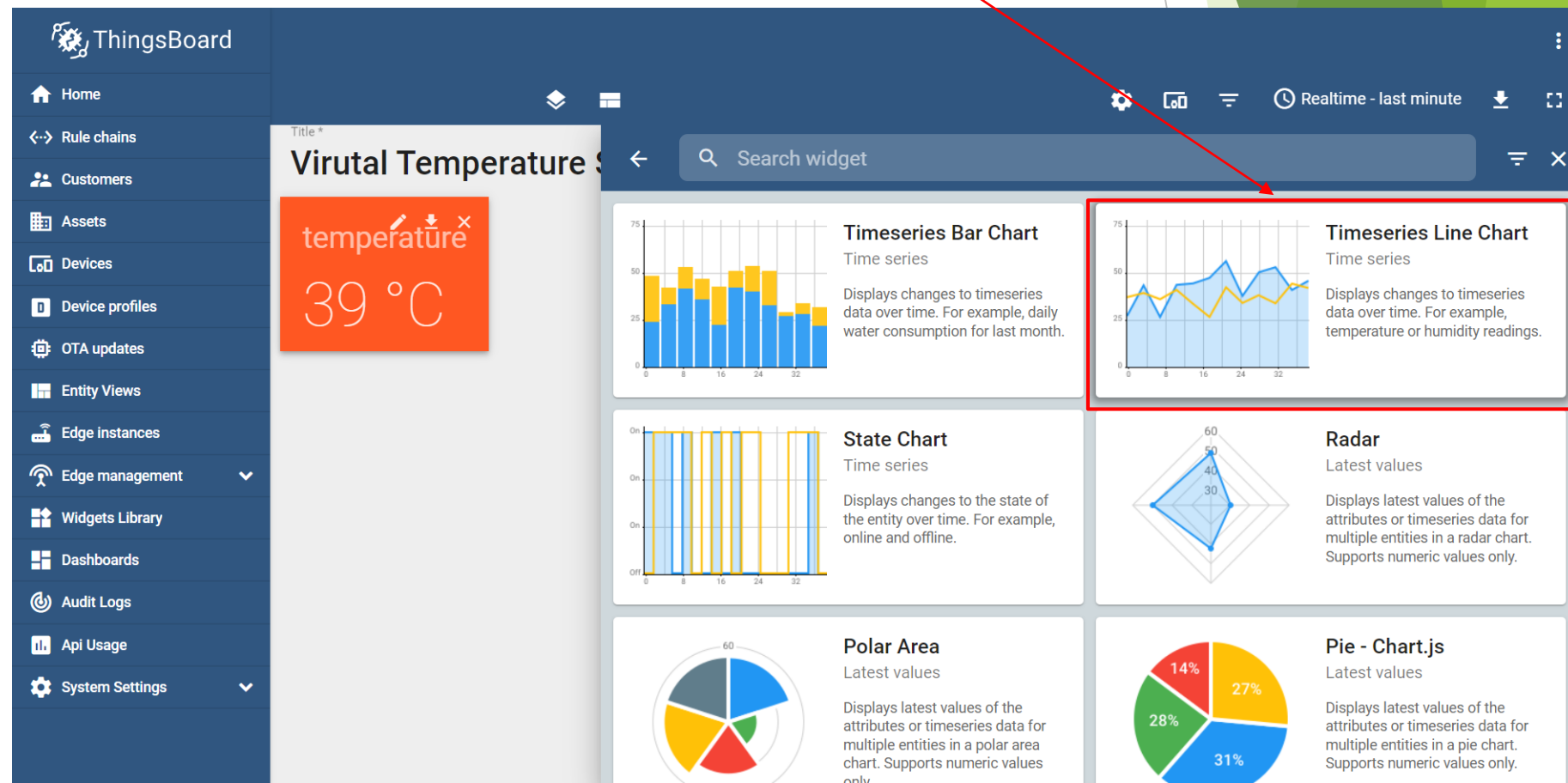
► 第三步，创建仪表盘：

- 选择“图表”捆绑包。向下滚动并单击“时间序列—线图”小部件。

► The third step, Dashboard Creation:

- Select the "Charts" bundle. Scroll down and click on the "Timeseries – Line Chart" widget.

click on the "Timeseries – Line Chart" widget



ThingsBoard基本使用

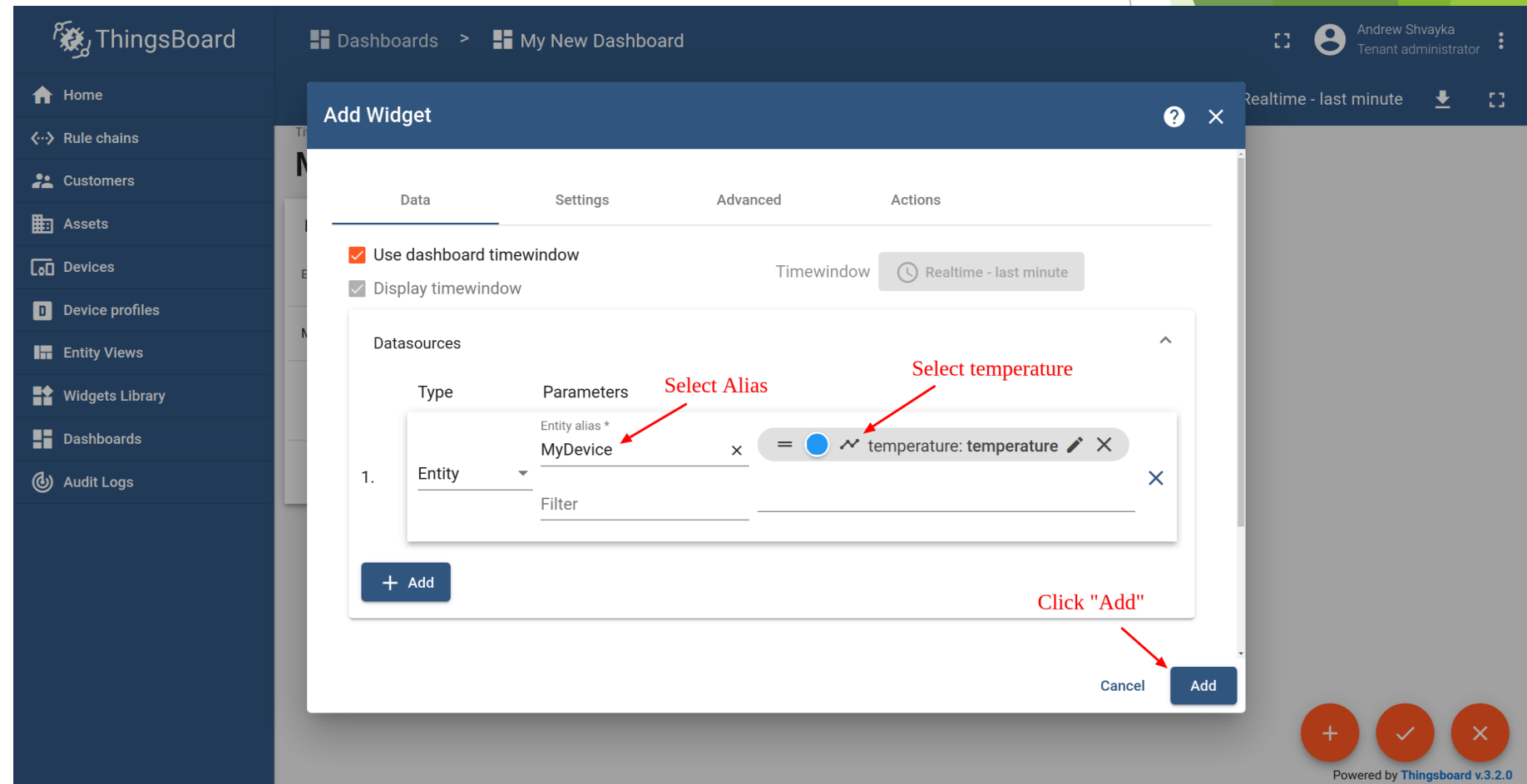
ThingsBoard Basic Usage

► 第三步，创建仪表盘：

- 单击“添加数据源”按钮。选择“我的设备”或读者自行命名的别名。选择“温度”键，点击“添加”。

► The third step, Dashboard Creation:

- Click the "Add Datasource" button. Select "MyDevice" Alias or user named alias. Select the "temperature" key. Click "Add".



ThingsBoard基本使用

ThingsBoard Basic Usage

► 第三步，创建仪表盘：

- 将小部件拖放到所需空间，在调整小部件的大小后应用更改。读者可以尝试多次发布不同的遥测值。请注意，默认情况下，小组件仅显示一分钟的数据。

► The third step, Dashboard Creation:

- Drag and Drop your widget to the desired space. Resize the widget and apply changes. Try to publish different telemetry values multiple times. Note that the widget displays only one minute of data by default.

