Video – Environmental Conditions in Packet Tracer

Hello everyone. This is our Cisco Packet Tracer environmental controls walkthrough video. In this video we're going further than just basic IoT devices. Here we're going to talk about environmental conditions that exist within Cisco Packet Tracer itself.

So we do have a smart lamp. We've got a fan. We've got a wind detector. We've got a lot more here that are going to work with the environment. We have a solar panel hooked up to a battery. That battery is hooked into the fan and to that lamp. Right now that battery is at zero. We see that our solar panel here has zero watts of energy coming in, and our wind detector is not even spinning. There's no wind. So we need to do some setup here for the environmental conditions.

So to get started, we're going to go into our physical view. Top left corner, we'll click on our physical workspace. In the physical tab, we're going to click on our city inside of this world map. We'll click on our house inside of the city, and here we go. This checkerboard look is just the wireless coverage for our actual wireless router in our home network. What we want to do is be able to utilize the environmental conditions.

So in the top right corner, there's a button called environment. We'll go ahead and click on that. Inside of environment, we see a huge drop-down menu. If you click on this drop-down menu, it allows us to select different physical locations. For example, when I click on intercity, my topology changes to the intercity. Now, this is called the intercity container. Any environmental conditions that I change here are specific to the intercity container. When I click on that city, we're now in the home city, and this home city also has its own environmental conditions. When I click on the home one more time, I'm now inside of the house itself, and again, the house has its own environmental conditions. To see that, I'll click back on the environment button one more time, and what we'll be able to notice, is that with this drop-down menu, we're going to be able to select any one of these containers just to control the environmental conditions within each container.

For our video, we're going to stay within the Home container, because we want to modify the environment that's going to affect our solar panel and our wind sensor. So let's get started in the Home container itself. When I have Home selected, I can click View, and it shows me what's going on regarding settings set for the home. The only thing set right now is sunlight, and we're going to work with that in just a little bit. I'm going to click Edit, next to my location of Home, and we're back to this view of a graph and an Advanced tab. If I were to forget about this graph right now and just scroll down, we're able to view different icons regarding a legend for what we can show in the graph. Anything that's showing a color with a bolded name is currently displayed in the graph above. We see a red line. That's based off of sunlight. We see a blue, which is based off the ambient temperature. I can click ambient temperature just to turn off the blue. What you want to do is actually modify the conditions that exist for my environmental variables for the home.

So let's click on the Advanced tab. This is the first place to go. With the Advanced tab, we have a time listed here. And this time is not the current time in your world. It's the current time in Packet Tracer. At 11:00 p.m. in Packet Tracer, these environmental conditions down below will take effect. You can actually scroll through these conditions and be able to see what you can control. Anything such as electricity and energy, or even gases, there's carbon dioxide, oxygen, nitrogen. Going further, the forces of gravity, where we're going to play, which is light, including sunlight, or even things like motion, sound, temperature, water and wind, and we'll go into wind as well. So let's get into this and actually start setting up environmental variables.

Right now at 11:00 p.m., we have sunlight set to zero. Makes sense, it's getting to be dark outside. Maybe we'll change that value example to one. In order to have the value of sunlight strength of one take effect, I'll have to hit the enter key, and then it goes from blue to black. If I scroll back up to the top, I can click Next, and it changes what's called a keyframe. Keyframes are just points in time in Packet Tracer. At 12:00 a.m., which is really midnight, what should we have regarding sunlight? Well the sunlight is set to zero at this time. And that makes sense. So to actually view these two keyframes inside of an interactive graph, we can click

on Keyframe Graph. And we can see a bullet point on the far left, a bullet point on the far right. If we wanted to add another keyframe, which is another point in time in Packet Tracer, I can either do it in the Advanced tab by clicking Add Keyframe, but there's an even easier way.

In the Keyframe Graph, this powerful, awesome graph, I can double click at any point in time, and check it out, it makes a new keyframe point. When I double clicked, I double clicked at 10:00 a.m. And now I have a new keyframe point at 10:00 a.m. If I wanted to have another point in time, maybe closer to 6:00 p.m., which is 1800 hours, I can double click at 18, and now I have another keyframe point. If I go back to the Advanced tab we'll actually see that instead of just having two points in time, now I have four. Keyframe two is where I'm at right now. It shows me it's 10:00 a.m. I can go into the light settings for sunlight, and for 10:00 a.m., I can change the value here to maybe 70% and hit enter. When I click Next, I should be able to see the next moment in time, and that next moment in time is 6:00 p.m. And for 6:00 p.m. instead of 0% sunlight, I can go with how about 78%, and click enter. Now we want to view this on the graph, I'll click on Keyframe Graph, and if it doesn't look like it updated, what we can do is click on Sunlight in the chart below, takes it off. Click Sunlight again, and check it out. Now the graph has been modified for those keyframe points. The neat thing about this is like, you know what, maybe I don't like having that much sun at 10:00 a.m. I can just click and drag on that point in time, and I can lower how much sunlight is at 10:00 a.m.. I can even move that keyframe point to about 8:00 a.m. So at 8:00 a.m. we can have about maybe 60% sunlight. If I want to have a lot of sunlight at noon, I can just double click on noon. It builds me a new keyframe point, and I can just drag this thing up. I can drag this up as close to 100% as I want, or even over it if I want to. Back to 6:00 p.m., I'm going to lower the amount of sunlight. Now my environmental condition for sunlight inside of Packet Tracer is following this schedule throughout the day. In Packet Tracer, we have a cool ability to be able to control how much sunlight's coming in at any given moment.

The next one we want to do is going to be wind. So I'm going to go ahead and I'm going to click on in the chart here, I want Wind. So where is wind speed? If you don't see it in the chart, we can click down, and there's another whole set of different items we can monitor. I'll click Wind Speed. And now wind speed is here inside of Packet Tracer. What I can then do is control how much wind at any point in time throughout my day. And you can control this very easily. This wind speed is going to be based off of kilometers per hour, so we don't want to make it too fast and blow our house away, but we can customize how much wind is coming through our Cisco Packet Tracer environment again throughout the day. We can used the Advanced tab as I showed, but we can also use that Keyframe Graph.

So to close it all up, let's go back to our Cisco Packet Tracer. I'm going to go back to my logical view, and what we can see here is the wind detector is spinning. There is a wind. The solar panel is actually receiving energy from the sunlight, and check it out, that's charging our battery. So play with Cisco Packet Tracer, make it your own, and enjoy IoT.