



Risk score

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Risk score

What is a risk score?

A risk score is an indicator of the good health and criticality level of a device, on a scale from 0 to 100. It has a color code associated to the level of risk:

Score	Color	Risk level
From 0 to 39	Green	Low
From 40 to 69	Orange	Medium
From 70 to 100	Red	High

The notion of risk scores appears in several parts of Cisco Cyber Vision. For example, you will find them in:

- The filter criteria.
- The device list.
- The device technical sheet.
- The device risk score widget (Home page).
- The preset highlight widget (Home page).

What is a risk score used for?

The risk score is meant to help the user easily identifying which devices are the most critical within the overall network. It provides limited and simple information on the cybersecurity of the monitored system. It is intended as a first step in security management to take actions by showing the causes of high scores and providing solutions to reduce them. The goal is to minimize and keep risk scores as low as possible.

The solutions proposed can be:

- to patch a device to reduce the surface of attack,

- to remove vulnerabilities,
- to update firmware,
- to remove unsafe protocols whenever possible (e.g. FTP, TFTP, Telnet),
- to install a firewall,
- to limit communications with the outside, by removing external IPs.

In addition, it is necessary to define the importance of the devices in your system by grouping devices and setting an industrial impact. Thereby, increasing or decreasing the risk score, which will allow you to focus on most critical devices.

All these actions will reduce the risk score which affect its variables, i.e. the impact and the likelihood.

For example, removing unsafe protocols will affect the likelihood of the risk, but patching a device will act on the impact of the risk.

Risk score represents an opportunity to update usage and maintenance habits. However, it is NOT intended to replace a security audit.

In addition, risk scores are used in Cisco Cyber Vision to sort out information by ordering and filtering criteria in lists and to create presets.

How is the risk score computed?

The risk score is computed as follows:

Risk = Impact x Likelihood

Impact:

The impact answers the question: What is the device “criticality”, that is, what is its impact on the network? Does it control a small, non-significant part of the network, or does it control a large critical part of the network? To do so, the impact depends on:

- The device tags, because some device types are more critical. Each device type (or device tag) or device tag category has been assigned an industrial impact score by Cisco Cyber Vision. For example, is the device a simple IO device that controls a limited portion of the system, or is it a Scada that controls the entire factory? These will obviously not have the same impact if they are compromised.
- The user has the possibility to act on the device impact by moving it into a group and setting the group's industrial impact (from very low to very high).

Likelihood:

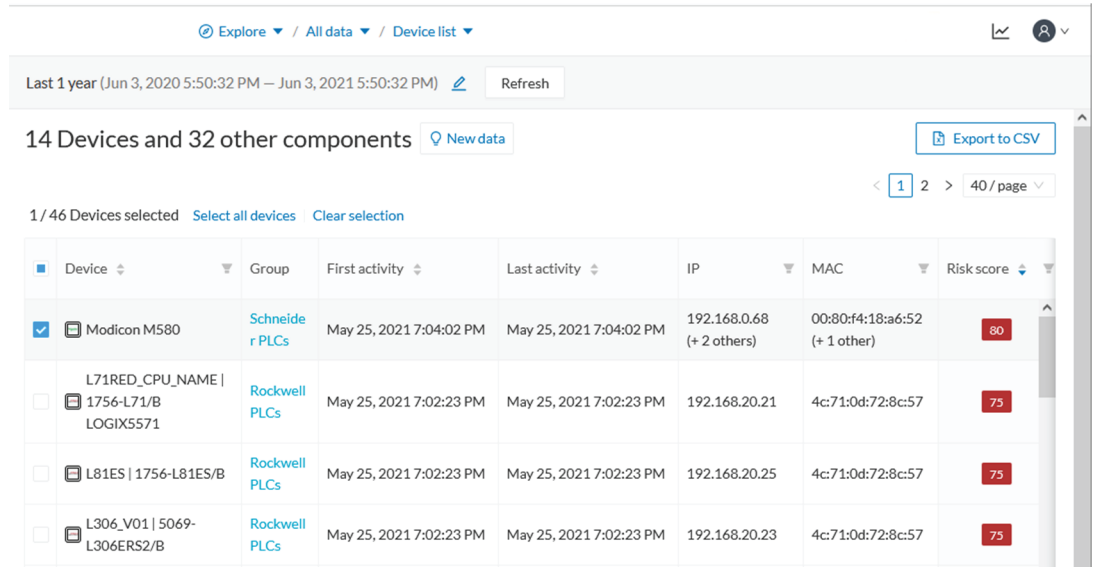
The likelihood answers the question: What is the likelihood of this device being compromised? It depends on:

- Device activities, more precisely on the activity tags. Because some protocols are less secure than others. For example, Telnet is less secure than ssh.
- The exposure of the device communicating with an external subnet.
- Device vulnerabilities, taking into account their CVSS scoring.

These criteria are visible under Details in the device's technical sheet.

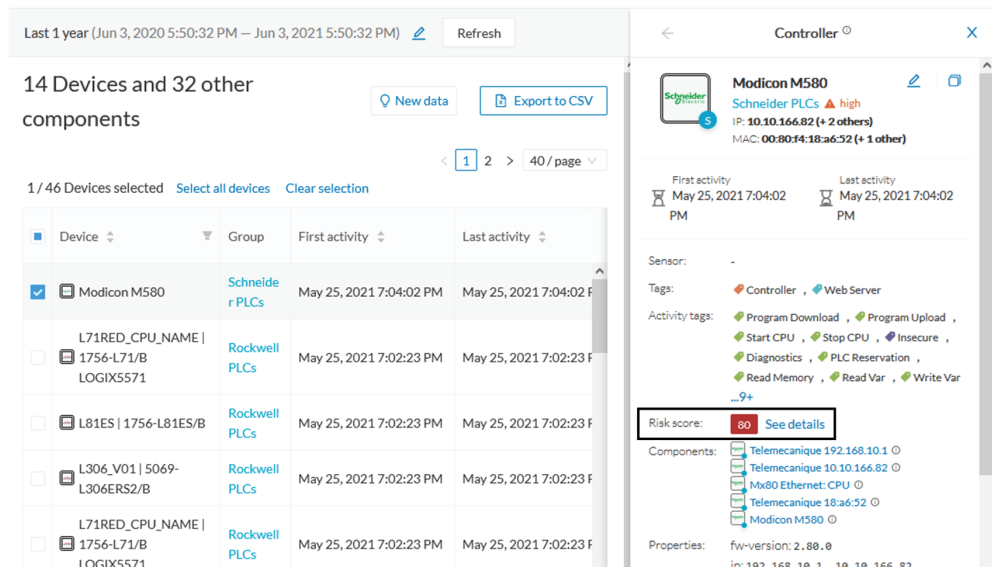
How to take action:

1. In the device list, in the risk score column, click the sort icon to get the highest risk scores.



Device	Group	First activity	Last activity	IP	MAC	Risk score
<input checked="" type="checkbox"/> Modicon M580	Schneider PLCs	May 25, 2021 7:04:02 PM	May 25, 2021 7:04:02 PM	192.168.0.68 (+ 2 others)	00:80:f4:18:a6:52 (+ 1 other)	80
<input type="checkbox"/> L71RED_CPU_NAME 1756-L71/B LOGIX5571	Rockwell PLCs	May 25, 2021 7:02:23 PM	May 25, 2021 7:02:23 PM	192.168.20.21	4c:71:0d:72:8c:57	75
<input type="checkbox"/> L81ES 1756-L81ES/B	Rockwell PLCs	May 25, 2021 7:02:23 PM	May 25, 2021 7:02:23 PM	192.168.20.25	4c:71:0d:72:8c:57	75
<input type="checkbox"/> L306_V01 5069-L306ERS2/B	Rockwell PLCs	May 25, 2021 7:02:23 PM	May 25, 2021 7:02:23 PM	192.168.20.23	4c:71:0d:72:8c:57	75

2. Click a device in the list. Its right side panel opens.
3. Click the risk score's "see details" button.



14 Devices and 32 other components

1/46 Devices selected

Device	Group	First activity	Last activity
<input checked="" type="checkbox"/> Modicon M580	Schneider PLCs	May 25, 2021 7:04:02 PM	May 25, 2021 7:04:02 PM
<input type="checkbox"/> L71RED_CPU_NAME 1756-L71/B LOGIX5571	Rockwell PLCs	May 25, 2021 7:02:23 PM	May 25, 2021 7:02:23 PM
<input type="checkbox"/> L81ES 1756-L81ES/B	Rockwell PLCs	May 25, 2021 7:02:23 PM	May 25, 2021 7:02:23 PM
<input type="checkbox"/> L306_V01 5069-L306ERS2/B	Rockwell PLCs	May 25, 2021 7:02:23 PM	May 25, 2021 7:02:23 PM
<input type="checkbox"/> L71RED_CPU_NAME 1756-L71/B LOGIX5571	Rockwell PLCs	May 25, 2021 7:02:23 PM	May 25, 2021 7:02:23 PM

Modicon M580
Schneider PLCs **high**
IP: 10.10.166.82 (+ 2 others)
MAC: 00:80:f4:18:a6:52 (+ 1 other)

First activity: May 25, 2021 7:04:02 PM
Last activity: May 25, 2021 7:04:02 PM

Sensor: -
Tags: Controller, Web Server
Activity tags: Program Download, Program Upload, Start CPU, Stop CPU, Insecure, Diagnostics, PLC Reservation, Read Memory, Read Var, Write Var, ...9+

Risk score: **80** [See details](#)

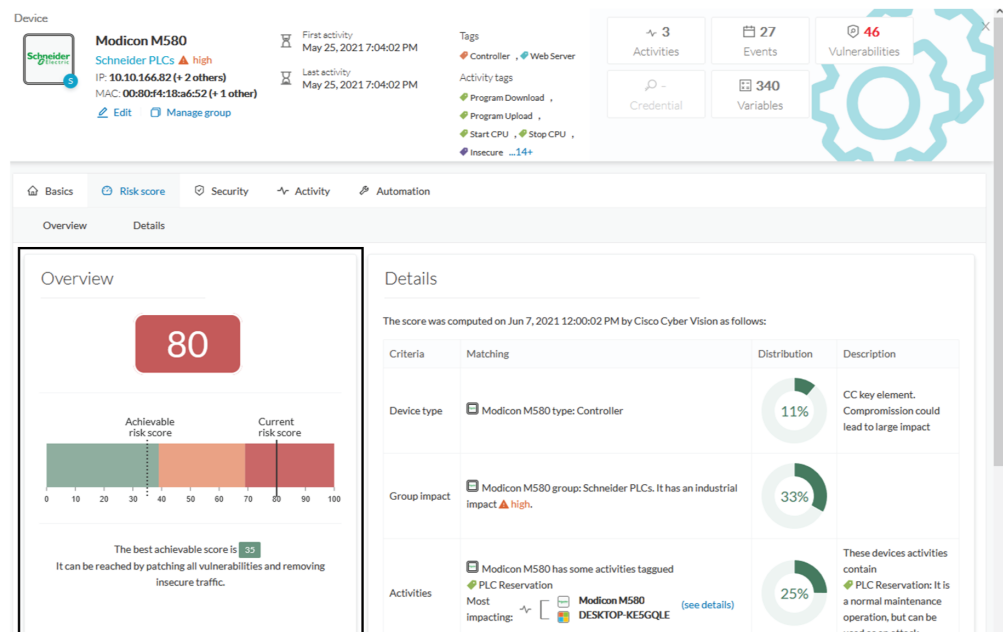
Components: Telemecanique 192.168.10.1, Telemecanique 10.10.166.82, Mx80 Ethernet: CPU, Telemecanique 18:a6:52, Modicon M580

Properties: firmware-version: 2.80.0
in: 192.168.10.1, 10.10.166.82

The device's technical sheet opens on the risk score's menu.

Under overview, you can see the current risk score and the achievable risk score.

The achievable risk score is the best score you can reach if you patch all vulnerabilities on the device and remove all potential insecure network activities. The score cannot be zero because devices have intrinsic risks coming from their device type and, if applicable, their group industrial impact.



Under Details, you have further information about the different risks impacting the device, the percentage of the risk they represent within a total risk score, and the solutions to reduce or even eliminate them.

Device type (1) and group impact (2) affect the risk impact variable, meanwhile activities (3) and vulnerabilities (4) affect the risk likelihood.

Details

The score was computed on Jun 7, 2021 12:00:02 PM by Cisco Cyber Vision as follows:

Criteria	Matching	Distribution	Description
1 Device type	Modicon M580 type: Controller	11%	CC key element. Compromise could lead to large impact
2 Group impact	Modicon M580 group: Schneider PLCs. It has an industrial impact ▲ high.	33%	
3 Activities	Modicon M580 has some activities tagged PLC Reservation Most impacting: Modicon M580 DESKTOP-KE5GQLE (see details)	25%	These devices activities contain PLC Reservation: It is a normal maintenance operation, but can be used as an attack
4 Vulnerabilities	Modicon M580 most impacting vulnerability is Multiple vulnerabilities in modicon controllers	31%	Multiple vulnerabilities in modicon controllers CVE-2018-7842 CVSS score: 9.8 A CWE-290: Authentication Bypass by Spoofing vulnerability exists which could cause an elevation of ...show more See details

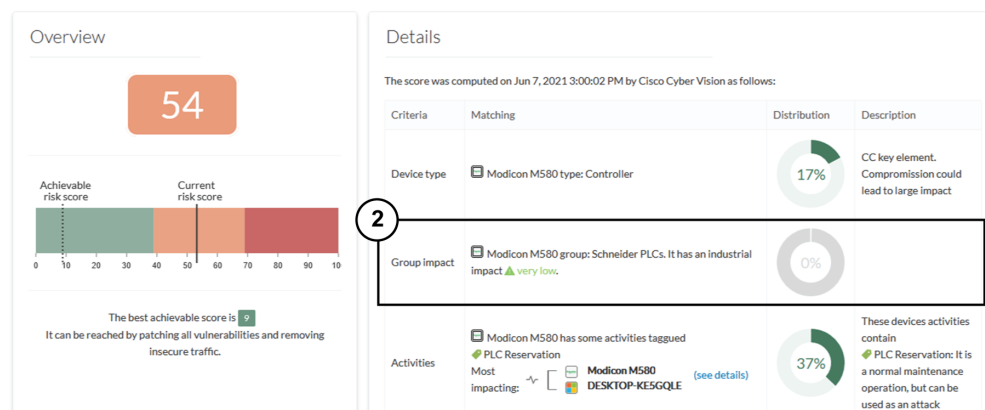
As first information, you have the last time the risk score was computed by Cisco Cyber Vision. Risk score computation occurs once an hour. However, you can force computation by using the following command on the Center shell prompt:

```
sbs-device-engine
```

Below, appears the information retrieved during the last computation.

- Device type (1): Each device type corresponds to a [device tag](#) detected by Cisco Cyber Vision. There is no action to be done at the device type level, because each device tag is assigned with a risk score by default in Cisco Cyber Vision.
- The group impact (2): Action is possible if the device belongs to a group. You can decrease the impact by lowering the industrial impact of the group that the device belongs to.

For example, if I set the group industrial impact to very low (previously high), the overall risk score decreases from 80 to 54:



Note The new industrial impact will be taken into account at the next risk score computation (once an hour).

- **Activities (3):** The most impactful activity tag is displayed. The risk can be lowered if all potential insecure network activities are removed.
- **Vulnerabilities (4):** Click the "see details" button for more information about how to patch the vulnerabilities and so reduce the device risk score.

Details

The score was computed on Jun 7, 2021 12:00:02 PM by Cisco Cyber Vision as follows:

Criteria	Matching
Device type	Modicon M580 type: Controller
Group impact	Modicon M580 group: Schneider PLCs. It has an industrial impact ▲ high.
Activities	Modicon M580 has some activities tagged PLC Reservation Most impacting: Modicon M580 DESKTOP-KE5GQLE (see details)
Vulnerabilities	Modicon M580 most impacting vulnerability is Multiple vulnerabilities in modicon controllers

4 Vulnerability

9.8
CVSS score v2

Multiple vulnerabilities in modicon controllers

Identifier: [CVE-2018-7842](#)

Description: A CWE-290: Authentication Bypass by Spoofing vulnerability exists which could cause an elevation of privilege by conducting a brute force attack on Mo... [show more](#)

Solution: The vulnerabilities described in this document are linked to weaknesses in the management of Modbus protocol. Products with no fix available can be mi... [show more](#)

Published on: May 14, 2019

Links: [Schneider](#)

By taking these actions, the risk score should decrease considerably.