# Data Collection

For this particular case, we will be collecting the data (CPU Temperature and fan speed)from the onboard Dell application known as the ‘Lifecycle Controller’ which is delivered as part of integrated Dell Remote Access Controller (iDRAC) out-of-band solution and embedded Unified Extensible Firmware Interface (UEFI) applications in the latest Dell servers.

When booting up a 13th Generation Dell Server and the USB Ports have initialised, you will be presented with 4 options. For the purpose of data collection, I will only mention the option that is of concern which is the F10 Option

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Description automatically generatedBefore we continue any further, it must be mentioned that what is to be shown can also be done with many other brands of server such as IBM and HP with their own and respective management firmware, for instance, the HP Model variant would still list you with 4 options whilst booting and again you will enter F10 to enter its ‘Intelligent Provisioning’ firmware to then view and collect its sensor data

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Going back to the Dell R630 we were looking at initially, after it has booted successfully into the Lifecycle Controller, we will be presented with a host of utilities to enter and in this case, we shall enter the ‘Hardware Diagnostics’ tab which will allow us to do one of two things:

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‘Run Hardware Diagnostics’ or ‘Export SupportAssist collection’. The 1st option will lead us to the preventative/reactive form of maintenance. This test can vary from taking between 20 minutes to 2 hours depending on the issue which can mean a long and undesirable downtime of a system but it does give a detailed breakdown of all tests and results when the server is put under stress or not. We want to export the initial/running diagnosis of all parts of the server where a sensor is located which not only gives us valuable information but also does not take a long time to do (usually around 4 minutes) and with this data, we will use it to build the predictive form of maintenance with the use of TensorFlow and AI

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Click agree to continue ->

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All boxes that can be checked must be checked to ensure we collect the maximum amount of sensor data possible then click next to continue again

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This screen dictates where the gathered information should be stored, I chose using a USB for simplicity but via the NFC or CIFS protocol, the information can be directly stored on your computer, or any other virtual drive located.

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Click finish on the final conformation screen to then complete this process for 1 server, this whole process must be completed for each server (Data Point)

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Description automatically generatedWith this, the data is now stored on the USB and ready to be organised.