Embedded Linux is a variant of the Linux operating system designed to run on embedded systems such as mobile devices, industrial machines, medical equipment, and consumer electronics. It is highly customizable, flexible, and scalable, making it a popular choice for a wide range of applications.

One of the most significant features of embedded Linux is its open-source nature. Being open-source, the source code is freely available for developers to modify and distribute, making it highly adaptable and customizable. Additionally, it comes with a large community of developers who constantly contribute to its improvement.

Embedded Linux is also known for its small size and low resource requirements, making it versatile enough to run on different hardware platforms, from low-power microcontrollers to high-end embedded processors. This versatility makes it an ideal choice for embedded systems that need to be highly customized.

Embedded Linux's importance lies in its ability to provide a stable, reliable, and scalable platform for developing embedded systems. It comes with numerous development tools, libraries, and frameworks, as well as active and helpful communities of developers.

The usefulness of embedded Linux extends to a wide range of applications, such as medical devices, automotive systems, aerospace and defense systems, industrial control systems, and consumer electronics. In addition, it is increasingly becoming popular in the Internet of Things (IoT), where it provides a secure and reliable platform for connecting devices to the internet.

When compared to real-time operating systems (RTOS), embedded Linux and RTOS have some key differences. RTOS is designed for use in real-time applications, where timing and responsiveness are critical. It is typically smaller and faster than embedded Linux and provides deterministic performance guarantees.

However, embedded Linux offers greater flexibility and scalability, as well as a broader range of development tools and frameworks. It can also be used in real-time applications with the addition of real-time extensions like PREEMPT\_RT or Xenomai.

In conclusion, embedded Linux is a highly adaptable, reliable, and scalable operating system that is perfect for a wide range of embedded applications. Its open-source nature, small size, and low resource requirements make it a popular choice for developers, while its flexibility and scalability make it an ideal platform for creating custom solutions. While RTOS may be better suited for certain real-time applications, embedded Linux remains a popular and important choice for embedded developers.