

## **PTP - Frequently Asked Questions**

### **1. What is PTP?**

- PTP is a Precision Time Protocol, used to synchronize time on various devices\appliances with a high level of accuracy and granularity.

### **2. Why would I want PTP rather than NTP?**

- NTP was commonly used to synchronize the clocks with the atomic clock, over the internet as a media. But as the systems moved from the millisecond to microsecond levels, NTP was found unacceptable, primarily due to time accuracy concerns.

### **3. My computer/machine has clock then why should I use PTP?**

- The machine clock drifts with time and it needs to be re-aligned with some standard reference time. PTP is one such time. Also the exchange trading system uses PTP in its matching engine. Thus the application can synchronize their system time with exchange time more accurately.

### **4. Are there specific operating system to be used for configuration of PTP service?**

- No. Any operating system can be used. However, there may be a requirement of dedicated hardware for PTP purposes. However, we strongly recommend to use PTP on supported Linux based operating system.

### **5. Are there special network switches or NIC Card required that must be utilized for superior accuracy and Why?**

- To ensure that the end-to-end system setup including networks\servers are all accurately synchronized, all devices\appliances in the path must support PTP.

### **6. Do I need to buy master clock to use PTP?**

- Members don't need to invest in a Master clock, instead they can use the Master clock provided by BSE. The Exchange has set-up a master clock in BSE colocation and the PTP signals can be transmitted to the member servers.

### **7. How accurate is PTP adapters in synchronizing time and what level of accuracy is does it provide to customers?**

- The accuracy of PTP adapters are in the range of Nano seconds.

**8. What changes are required at my end for PTP?**

- Some infrastructural changes are required for PTP. The local server will require a PTP supporting NIC, e.g. Solarflare 7322. In case hardware is not available, a software PTP service can be installed. However, software PTP is not as accurate as hardware PTP.

**9. What is difference between hardware clock and software clock?**

- Hardware clock has dedicated on-board crystals to enable accurate synchronization. Software clocks do not have such a feature; hence can be less accurate than hardware clock.

**10. Is PTP possible in 1G setup or it can be only be done in 10G?**

- PTP is possible in a 1G setup, however, 10 G is recommended for better accuracy.

**11. Can I do PTP implementation on my NIC card (non solarflare card) i.e. will the PTP get sync to the grand master clock provided?**

- This can be done, however your NIC OEM will have to support the same.

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