Week 36

The sampling time is meaningless in continuous time system, so the result for performance is same. Because of Limiting the communication connection, make the sampling rate bigger than before. It means moving much data and it can reduce the function of the system.

Fig 1 and 2 show the delay time between controllers. According to the different parts there are 4 different delays in system.

Tpre: The time use for processing the control signal from outside.

Twait: The incoming data caches the time of arriving at the network link in the data frame of the sender.

Ttx: The time for data frame transmission from one to another. The delay between master slave mode and slave mode to master mode may vary greatly.

Tpost: The time after receiving the data frame in the end.It consists of packet resolution loops and delays until measurement signals are used in the main control loop.



Fig 1. Time diagram showing the time spend to transfer data between different node of a networked control system

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Fig 2. Fig 6. Signal to controller simulation model

Today, SDN technology through several years of development, has been in some areas of the substantive application. It is in order to reduce the complexity of the rapid development of the Internet, SDN as a constructive open, programmable, while the application of the core network technology, committed to the network "simplistic" development. SDN technology continues to be applied in various fields at the same time also indicates that the network function is no longer limited the arrival of complex hardware devices.

What areas are SDN applied to? Based on the development of network simplification, the network management platform also advocates the change of openness, virtuality and intelligence. In order to ensure that the flow control to make the intelligent network normal operation, SDN controller as a network of operating systems appear in the market, such as: RG-ONC SDN controller software can support up to 3000 network nodes network centralized management Scheduling, can support 300W flow meter, tens of thousands of subnets, to adapt to all sizes of SDN network control needs. Which can meet the data center, campus network and other needs of the scene.

The SDN controller platform removes the control plane, thus unloading the burden for the network device. They use protocols such as OpenFlow and OVSDB to control traffic and configure network devices, usually through a variety of chess pieces, which can provide different functions. The controller can manage and monitor the virtual network infrastructure while managing and monitoring the underlying physical network equipment; many controllers can isolate certain parts of the network for the multi-tenant network infrastructure.

SDN controller in addition to virtual network monitoring to release the constraints of network hardware, will also face some of the more difficult issues, such as high reliability. Automation deployment, no packet loss upgrades, etc., so that the application of SDN technology development will also be in the future through practice to find more applications, and in the process of running the various conditions, in the future on the road It is a long way to go.