CLAIMS

[Claim 1]

An information processing system comprising:

a first apparatus and a second apparatus,

wherein the first apparatus includes

transmitting means for sequentially transmitting a plurality of UDP packets each having a predetermined data size to the second apparatus at a predetermined time interval in a predetermined order, and

wherein the second apparatus includes

receiving means for receiving the UDP packets sequentially transmitted by the transmitting means,

extracting means for extracting pairs of the UDP packets, in which each of a transmission order and a reception order is continuous and the transmission order and the reception order match with each other, from among the UDP packets received by the receiving means,

calculating means for calculating an evaluation value for evaluation of a delay state of a communication path between the first apparatus and the second apparatus based on a ratio of a pair of the UDP packets having a reception time interval that is longer than a transmission time interval of the packets from among the pairs of the UDP packets extracted by the extracting means, and

judging means for judging whether a bandwidth of a bit rate, which is calculated in accordance with the predetermined data size and the predetermined time interval based on comparison between the evaluation value calculated by the calculating means and a threshold, is available or unavailable for communication between the first apparatus and the second apparatus.

[Claim 2]

The information processing system according to claim 1,

wherein the judging means judges that a bandwidth being equal to or larger than the bandwidth of the bit rate calculated in accordance with the predetermined data size and the predetermined time interval is available for the communication between the first apparatus and the second apparatus if the evaluation value calculated by the calculating means is smaller than the threshold, and the judging means judges that the bandwidth being equal to or larger than the bandwidth of the bit rate calculated in accordance with the predetermined data size and the predetermined time interval is unavailable for the communication between the first apparatus and the second apparatus if the evaluation value calculated by the calculating means is equal to or larger than the threshold.

[Claim 3]

The information processing system according to claim 2,

wherein the first apparatus further includes changing means for changing at least one of the predetermined data size and the predetermined time interval to change the bit rate of the UDP packets to be transmitted to the second apparatus,

the judging means judges availability or unavailability for each bit rate changed by the changing means,

the first apparatus further includes setting means for setting a quality of data for communication between the first apparatus and the second apparatus based on a bandwidth included between a bit rate judged as being available by the judging means and a bit rate judged as being unavailable, and

wherein the first apparatus starts data communication based on the quality of the data set by the setting means.

[Claim 4]

The information processing system according to claim 3,

wherein, based on UDP packets transmitted at a first bit rate, if the judging means judges that the first bit rate is available, the transmitting means transmits UDP packets to the second apparatus at a second bit rate that is larger than the first bit rate.

[Claim 5]

The information processing system according to claim 3 or 4,

wherein, based on UDP packets transmitted at a third bit rate, if the judging means judges that the third bit rate is unavailable, the transmitting means transmits UDP packets to the second apparatus at a fourth bit rate that is smaller than the third bit rate.

[Claim 6]

The information processing system according to any of claims 1 to 5,

wherein the calculating means calculates the evaluation value for the evaluation of the delay state of the communication path between the first apparatus and the second apparatus further based on a value indicating a difference between an average reception time interval of the packets in each of the pairs of the UDP packets extracted by the extracting means and the predetermined time interval.

[Claim 7]

An information processing apparatus comprising:

receiving means for receiving at least a part of a plurality of UDP packets each having a predetermined data size and sequentially transmitted at a predetermined time interval in a predetermined order;

extracting means for extracting pairs of the UDP packets, in which each of a transmission order and a reception order is continuous and the transmission order and the reception order match with each other, from among the UDP packets received by the receiving means;

calculating means for calculating an evaluation value for evaluation of a delay state of a communication path between the first apparatus and the second apparatus

based on a ratio of a pair of the UDP packets having a reception time interval that is longer than a transmission time interval of the packets from among the pairs of the UDP packets extracted by the extracting means; and

judging means for judging whether a bandwidth of a bit rate, which is calculated in accordance with the predetermined data size and the predetermined time interval based on comparison between the evaluation value calculated by the calculating means and a threshold, is available or unavailable for communication between the first apparatus and the second apparatus.

[Claim 8]

A program that causes a computer to function as:

receiving means for receiving at least a part of a plurality of UDP packets each having a predetermined data size and sequentially transmitted at a predetermined time interval in a predetermined order;

extracting means for extracting pairs of the UDP packets, in which each of a transmission order and a reception order is continuous and the transmission order and the reception order match with each other, from among the UDP packets received by the receiving means;

calculating means for calculating an evaluation value for evaluation of a delay state of a communication path between the first apparatus and the second apparatus based on a ratio of a pair of the UDP packets having a reception time interval that is longer than a transmission time interval of the packets from among the pairs of the UDP packets extracted by the extracting means; and

judging means for judging whether a bandwidth of a bit rate, which is calculated in accordance with the predetermined data size and the predetermined time interval, is available or unavailable for communication between the first apparatus and the second apparatus based on comparison between the evaluation value calculated by the calculating means and a threshold.