

## Activity Report of Asia-Pacific Medical Network Project in Kyushu University Hospital : Vol.5

Shimizu, Shuji  
Kyushu University Hospital

Nakashima, Naoki  
Kyushu University Hospital

<https://doi.org/10.15017/14314>

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出版情報 : Activity Report of Asia-Pacific Medical Network Project in Kyushu University  
Hospital. 5, 2009-04. TEMDEC事務局

バージョン :

権利関係 :

### 3. Network news

Recently many Japanese hospitals have joined the activities of TEMDEC. Some hospitals can use Research and Education Internet which is very fast like Kyushu University Hospital but some hospitals can not. In this section, the network connectivity situations of new hospitals are explained. There is special focus on how to connect to Quatre which is connected in QGPOP (Kyushu GIGA Pop Project) from each hospital.

#### 1) Hospitals which use SINET

Hospitals which are attached to universities can use SINET, which is operated by the National Institute of Informatics. For example, the hospitals of Kyoto University, Yamaguchi University, Nagasaki University, and Fukuoka University. Now such hospitals can use 30Mbps traffic for DVTS (Digital Video Transport System) via SINET. On the other hand, a traffic check in advance is necessary for hospitals of medical colleges which connect to SINET at 100Mbps. For example, the real throughput is not certain until the traffic checking at Fujita Health University and Tokyo Medical and Dental University which connect to SINET at 100Mbps. After traffic checking, DVTS seems to be possible. However, DVTS from the University of Occupational and Environmental Health (UOEH) was impossible by traffic checking in advance. Tokai University Hospital, which is not a medical college hospital but does not have enough bandwidth to use SINET, also needed to check the traffic in advance. After checking, DVTS usage in Tokai University Hospital, DVTS has been found to be possible. Even when using SINET, traffic checking in advance is very important.

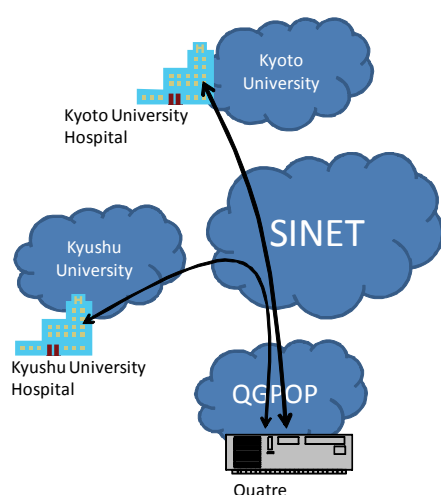


Fig 1:

Network connection from Hospitals of Kyushu University and Kyoto University via SINET

Private hospitals and public hospitals which are not attached to universities can not use SINET. In that case, another connection is necessary from those hospitals to QGPOP. QGPOP has Quatre which can communicate with DVTS at multiple sites and supports multi-party DVTS conferences. The connection to QGPOP from those hospitals should be secured. There are some candidates for these connections. The first candidate is direct connection. The second is using JGN (Japan Gigabit Network) which is operated by NICT. The third is using a commercial carrier's Intranet.

## 2) Direct Connection

According to the tariff of the circuit, only hospitals in Fukuoka city can connect to QGPOP directly using dedicated optical fiber or Broadband LAN services. In fact there no hospitals which have connected to QGPOP directly, but the Fukuoka Convention Center, where medical conferences are held, is connected to QGPOP directly by the broadband LAN service of commercial carriers such as Qtnet. Using Ethernet switches on both sides (the venue and QGPOP) are connected directly. The Ethernet switch at the venue should be prepared by the conference sponsor but the sponsor must also take care to connect on the QGPOP side. Therefore, sufficient discussion and negotiation between QGPOP and the sponsor are important.

## 3) Connection by JGN

JGN is a research oriented fast network over all Japan which is operated by NICT. JGN can be used by many kinds of organizations other than SINET. An organization can start to use JGN after their proposal has been approved by NICT. To reduce this overhead of deskwork, TEMDEC uses the application of QGPOP, which has already been approved. The research theme is “Research on Developments and Operations for a Strategic International Collaboration Network”. Each hospital becomes the member of this research project. Fujimoto Hayasuzu Hospital, Iwate Medical University, and Tokyo Science Foundation have connected to QGPOP using JGN in this way. JGN located a few access points (APs) in each prefecture. Each hospital must pay for the connection from the hospital to the AP. This cost is slightly more expensive than typical broadband LAN services because DVTS needs at least 30Mbps to connect to JGN. JGN prepares a temporal use plan for a short connection period, called event usage. Sapporo Convention Center used this JGN event usage when Sapporo Medical College hosted the conference. Sapporo Higashi-Tokushukai Hospital also used it.

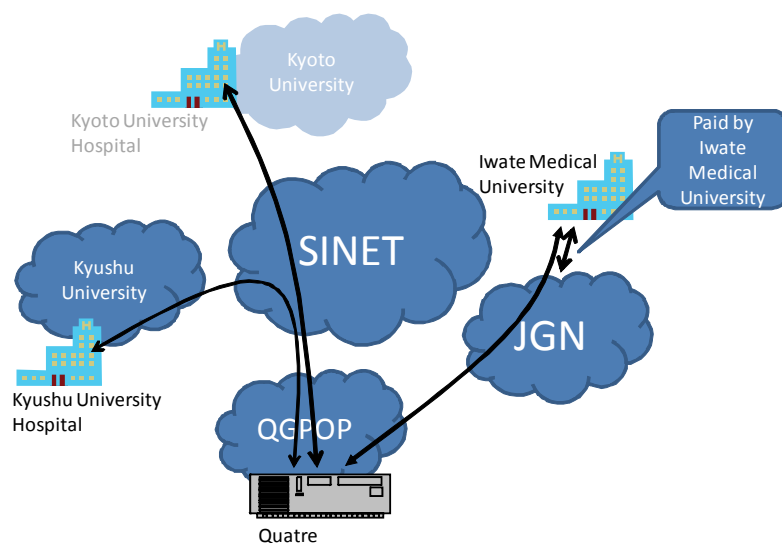


Fig 2: Connection of Iwate Medical University using JGN

## 4) Connection using Commercial Intranet

Flet's Premium Service by NTT West permits direct communication between subscribers inside its intranetwork by IPv6 without an ISP. NTT West kindly donates one big connection of this service to the Research Institute for Information Technology, Kyushu University under the relationship between NTT and Kyushu University. Using this 1G connection, QGPOP is connected to NTT West's Flet's Premium Intranetwork. If the hospital subscribes to Flet's Premium service, it can connect to Quatre inside QGPOP with sufficient speed. Using this Flet's Premium Service, Kyoto Second Red Cross Hospital, Tomishiro Central Hospital, and Acros Fukuoka can all connect to Quatre.

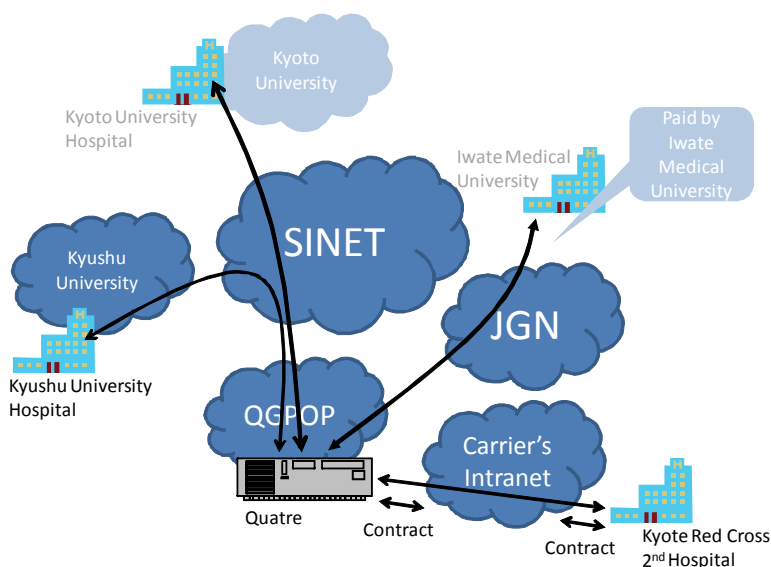


Fig 3: Connection of Kyoto Second Red Cross Hospital by Commercial Intranet

## 5) Alternative Connection Method

Recently, commercial Internet services have become very fast and SINET can connect to commercial ISPs with very good speeds. 30Mbps between QGPOP and commercial Internet via SINET is sometimes possible. UOEH has the IIJ (Internet Initiative Japan) service, and 30Mbps DVTS from UOEH via IIJ to SINET has been tried and succeeded. Use of the Internet is not recommended, but if the organization has enough bandwidth from their ISP, and there are no another way, then this may be an option.