Allied Telesis™

Critical, Always-On Network Meets Needs of Large City Hospital

Matsumoto Kyoritsu Hospital, in Japan, select an Allied Telesis Management Framework (AMF) solution to optimize network operation and management.

Introduction

Social Medical Care Corporation
Chushin Workers' Medical Association

Matsumoto Kyoritsu Hospital

- Address: 9-26 Habaue, Matsumoto City, Nagano Prefecture, Japan
- Founded: November 1973 as Matsumoto Clinic; April 1981 as Matsumoto Kyoritsu Hospital
- Bed numbers: 199 beds for general patients
- Number of employees: 380, as of April 1, 2013
- Departments: 10, including Department of Internal Medicine and Department of Surgery

The hospital provides medical care and services, with an unchanging mission since its establishment: "To provide truly patient-centered medical care." Hospital facilities include a Cardiovascular Center, a Dialysis Center, a Sleep Center, and rehabilitation facilities.

The network requirements

Matsumoto Kyoritsu Hospital is located next to the Matsumoto Station in the Nagano Prefecture. This prefecture is considered the gateway to the Northern Japan Alps. Initially established by a working people's cooperative and named "Matsumoto Clinic", the hospital celebrated its 40th anniversary in 2013.

Keeping its mission statement in mind - "To provide truly patient-centered medical care" - the hospital has recently engaged in a number of initiatives, such as:

- Sharing information with patients, with the aim of enabling them to participate in the planning of their medical care, and thus improve the quality of that care.
- Enhancing their abilities and performance in emergency care and advanced care.
- Enhancing coordination with other medical facilities, and contributing to the local healthcare network.

The hospital is supported by a medical information system and an in-house network. In the course of developing its network, the hospital developed an ordering system in 2000, and an electronic health record system in 2001.

The original network consisted of a three-layered topology with a Layer 3 switch at the core. Since they developed their electronic health record system, the hospital has focused on having an integrated network.

In 2006 an Allied Telesis chassis-based core switch was installed. This switch provided excellent port density, and dual power, fan and CPU modules. The new network core greatly improved network reliability.

After the installation of this core switch, Matsumoto Kyoritsu Hospital spent some years working on virtualizing their servers - including the servers for the electronic health record system - and the imaging system.

As the development of the virtual data environment progressed, in 2013 the hospital again faced the need to update their networking equipment.

The network upgrade

In 2013, Matsumoto Kyoritsu Hospital carried out a major upgrade to its data network infrastructure, using an Allied Telesis SwitchBlade x8100 Series next generation intelligent layer 3+ chassis switch at the core. SwitchBlade x8112 chassis are also used as access switches in a number of hospital departments.

The SwitchBlade x8112 chassis was chosen over other chassis options for the new network, as it provides integrated next generation features that support network virtualization, along with the expected resiliency of a chassis based product. Allied Telesis x610, x510 and x210 Series switches complete the new network, and are used for server and edge connectivity, as shown in the network diagram.

The Allied Telesis switches work seamlessly together as single virtual entity using the newly developed Allied Telesis Management Framework (AMF). This greatly reduces network management and automates many day-to-day network administration tasks.

This upgrade has given the hospital the level of reliability and availability required by a hospital network, and has significantly improved the efficiency of their network management operations. The automated features of AMF have greatly reduced the hospital's operational network management costs.

> " When we were considering renewing the network, we found out about the release of the SwitchBlade x8100 series. We could see real value in this product because it is a chassis-type switch which can provide the high performance necessary for consolidating our hospital network. Moreover, it provides equipment redundancy for items like line cards, control fabric cards and power units, thereby enabling a highly reliable network.
>
> Another reason we decided to purchase the SwitchBlade x8112 is that it will allow us to introduce Software-Defined Networking (SDN), which is attracting attention as a virtual server-related infrastructure. "
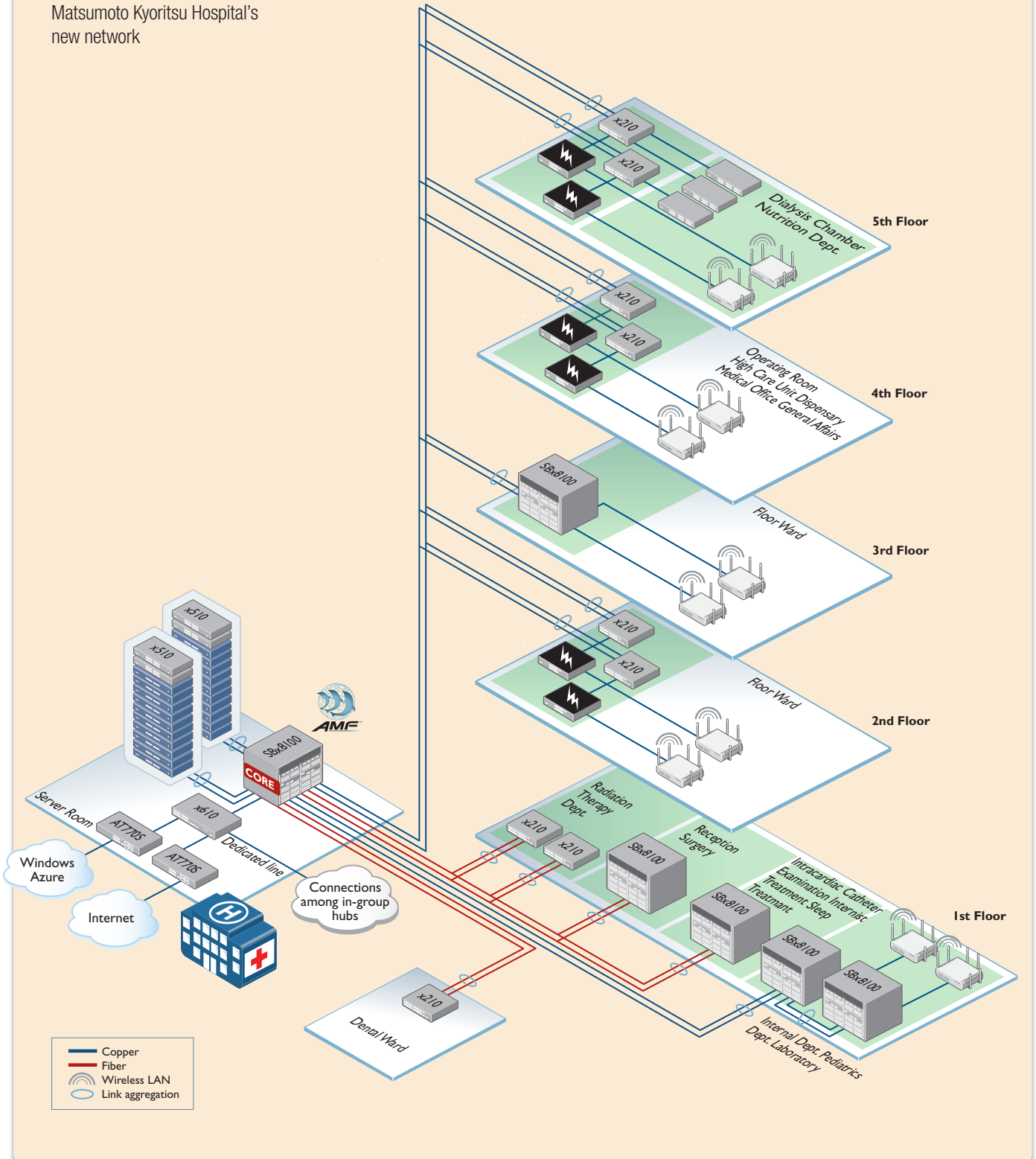

Mr. Eiji Shirakawa
Manager, Systems Division, Matsumoto Kyoritsu Hospital

The new network

Matsumoto Kyoritsu Hospital's
new network

x210	**5th Floor**
x210	Dialysis Chamber Nutrition Dept.
x210	**4th Floor**
x210	Operating Room High Care Unit Dispensary Medical Office General/Affairs
SBx8100	**3rd Floor** Floor Ward
x210	**2nd Floor** Floor Ward
x210	

x510

x510

AMF

SBx8100
CORE

AT770S
x610

AT770S

Dedicated line

Windows Azure

Internet

Connections among in-group hubs

Server Room

Radiation Therapy Dept.

Reception Surgery

Intracardiac Catheter Examination Internist Treatment Sleep Treatment

1st Floor

x210
x210
SBx8100

SBx8100

SBx8100

SBx8100

Internal Dept. Pediatrics Dept. Laboratory

x210

Dental Ward

▬▬	Copper
▬▬	Fiber
)))	Wireless LAN
◯	Link aggregation

AMF simplifies network management

The SwitchBlade x8112 operates as the master unit, referred to as the 'AMF Master', within the the Allied Telesis Mangement Framework.

AMF provides several key functions. It:
- Allows you to configure multiple networking devices within the network ('AMF members') simultaneously.
- Allows network devices to upgrade automatically.
- Automatically loads configuration and software onto newly-connected devices.
- Allows for plug-and-play replacement of failed units.

AMF simplifies management and reduces operational cost

AMF provides a large amount of automation, so it eliminates the need to configure devices one by one. Configuration occurs only once, and is then propagated to all units.

Previously, when a device failed, the administrator had to configure the replacement switch, and perform other additional processes to restore normal operation. By contrast, with AMF, the network is automatically restored in the event of a failure, with zero-touch management.
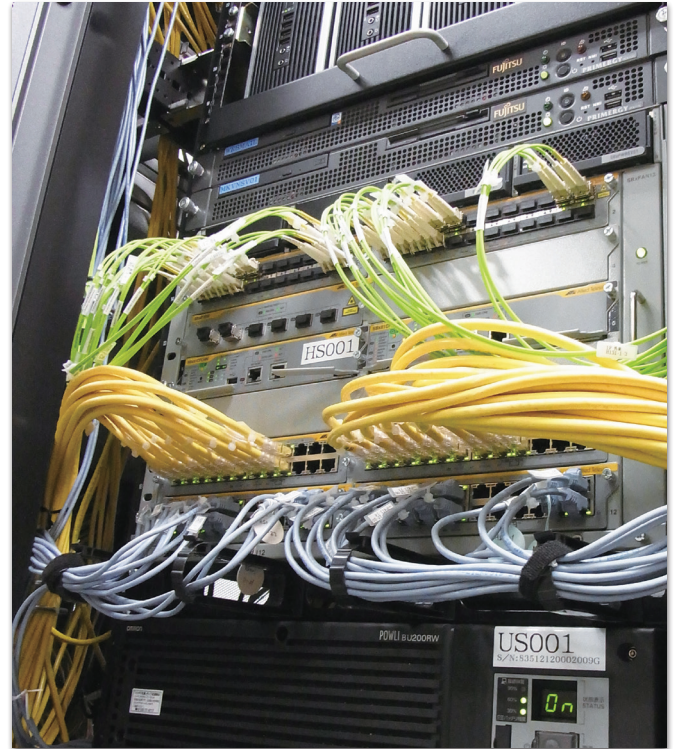
All of the hospital's Allied Telesis switches are compatible with AMF, and can be managed as a single virtual device.

AMF provides swift problem resolution

We asked Mr. Shirakawa how Matsumoto Kyoritsu Hospital views the automatic configuration capability of AMF. He said: ''Our hospital network has to run 24 hours a day, and a fast response is absolutely imperative when a problem happens. In the past, we have had to provision standby devices with preset configurations, and have been cutting over to them manually if a network failure occurs. Now, with AMF, we can restore operation very quickly and easily - because with AMF, the configuration and software is automatically installed on replacement devices.''

Mr Shirakawa is coordinating the virtualized server environments, including the electronic health record system. Matsumoto Kyoritsu Hospital utilizes 'teaming' for the server NICs. Multiple NICs can be handled as one NIC with teaming, making it possible to balance the traffic load across NICs and thus improve availability. For example, if there is a problem with the switch port to which a NIC is connected, it can be automatically restored with AMF - greatly enhancing availability.

Allied Telesis Management Framework (AMF) is a sophisticated suite of protocols and management tools designed to simplify network management.

AMF centralizes network management

AMF has allowed Matsumoto Kyoritsu Hospital the possibility of connecting their network with that of Shiojiri Kyoritsu Hospital in Shiojiri City, Nagano Prefecture. Like Matsumoto Kyoritsu Hospital, Shiojiri Kyoritsu Hospital is operated by the Chushin Workers' Medical Association.

Shiojiri Kyoritsu Hospital has adopted Allied Telesis x900 series switches at the core of its own hospital network. Upgrading the AlliedWare Plus firmware on those units will enable them to become AMF members. Mr. Shirakawa says: ''It will become possible to implement a combined management strategy for the two hospitals' networks. For example, we would be able to change the setup of the Shiojiri Kyoritsu Hospital x900s remotely, via the SwitchBlade x8112 in Matsumoto.''

Allied Telesis support

Testing and customer support

The hospital's network design and construction was implemented by FUJITSU FSAS Inc.. To verify it was working as it should, they tested the AMF operation between the core SwitchBlade x8112 chassis and an AT-x510-52GTX, which acts as a server switch. They pulled out the cable connected to the uplink port of the AT-x510-52GTX, and then plugged it into the standby device. The results: "Configuration information was automatically set. We were able to confirm that the AT-x510-52GTX standby device had been added to the set of AMF members," states Junichi Takase of the Information Services Department, FUJITSU FSAS Inc. Nagano Branch.

In addition to providing technical support for the hospital network design, Allied Telesis provided technical support during the implementation, and prior to the AMF testing. Also, Allied Telesis engineers conducted operation verification together with FUJITSU FSAS Inc. at their site. This support was key: "Cooperation from vendors is indispensable when adopting new technology like AMF. Allied Telesis provides fine-tuned technical support, and they have been very helpful." says Mr Eiji Shirakawa.

Future plans

In addition to developing its hospital network, Matsumoto Kyoritsu Hospital is also actively developing its workstations. As of 2014, 50 of the approximately 450 workstations in the hospital have been converted over to 'thin clients'. The hospital has also adopted Allied Telesis products, including the SwitchBlade x8112 and the x210 Series Switches, to connect thin clients to virtual desktop groups. Mr. Shirakawa stresses that "To effectively operate a virtual desktop, the key is to have a high-speed network between the server switch and the core switch."

The hospital plans to add 200 more thin client workstations and has confidence that the high performance of the SwitchBlade x8112 will lead to operation and management optimization.

Allied Telesis is committed to implementing networks with high reliability and availability, while being easy to manage. AMF provides a comprehensive solution for network virtualization.

Mr. Junichi Takase
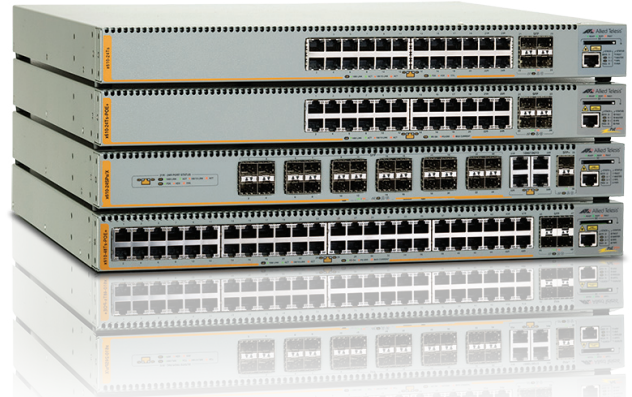Information Services Department, FUJITSU FSAS Inc. Nagano Branch

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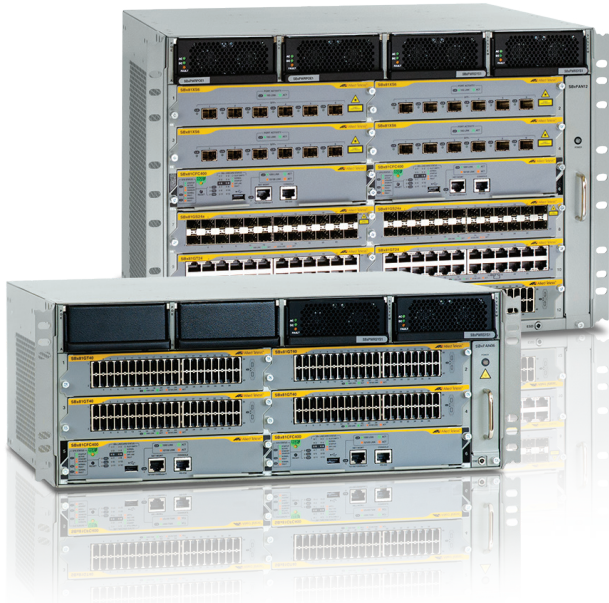
SwitchBlade® x8100

**NEXT GENERATION INTELLIGENT LAYER 3+ CHASSIS SWITCHES**

The Allied Telesis SwitchBlade x8100 Series is the ideal solution for the modern enterprise network core where reliability, resiliency and high performance are the key requirements.

AT-x610 Series

ADVANCED LAYER 3 GIGABIT STACKABLE SWITCHES

The Allied Telesis x610 series is the high performing and scalable solution for today's networks, providing an extensive range of port-density and uplink-connectivity options. 24-port and 48-port versions are available with optional 10 Gigabit uplinks and PoE+ ports. The ability to stack up to eight units includes using fiber for long distance stacking. The x610 Series can connect anything from a small workgroup right up to a large business.
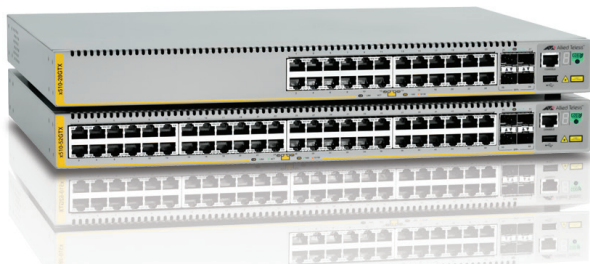
AT-x510 Series

STACKABLE GIGABIT SWITCHES

The Allied Telesis x510 Series of stackable Gigabit switches includes a full range of security and resiliency features, coupled with easy management, making them the ideal choice for network access applications.

AT-x210 Series

ENTERPRISE EDGE SWITCHES

Allied Telesis x210 Series Layer 2+ switches offer an impressive set of features in an affordable package, ideal for applications at the network edge.

About Allied Telesis, Inc.

Founded in 1987, and with offices worldwide, Allied Telesis is a leading provider of networking infrastructure and flexible, interoperable network solutions. The Company provides reliable video, voice and data network solutions to clients in multiple markets including government, healthcare, defense, education, retail, hospitality, and network service providers.

Allied Telesis is committed to innovating the way in which services and applications are delivered and managed, resulting in increased value and lower operating costs.

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Allied Telesis

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