The UNIVERGE Storage Network Solution

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Abstract

The recent growth in the importance of IT data management has caused an increasing number of enterprises to study remote backup systems from the viewpoint of business continuity (BC) and disaster recovery (DR). The UNIVERGE Storage Network Solution solves problems related to system introductions; such as those related to the price, integrated system management and stable operation, by offering an outsourcing menu (resale of WAN circuits, rental of equipment and an operations administration & maintenance service) and also by adopting low-priced storage products.

1. Introduction

The complexity and diversification of business activities has increased the importance and role of information systems. To continue normal operations even in circumstances that result from a system fault or from the consequences of a disaster such as an earthquake, it is critical to back up data in remote locations. However, the introduction of a remote backup system that aims at ensuring Business Continuity (BC) and Disaster Recovery (DR) may be accompanied by problems including; 1) the necessity of high TCO due to the high price of the storage products that are the main system components and also to the need for high-speed WAN circuits; 2) the necessity for the de-

sign and construction of comprehensive network systems including storage devices and WAN circuits between storages; 3) the necessity of integrated operations administration & maintenance services of the storage and network devices.

The UNIVERGE Storage Network Solution is a remote backup system that solves all of these problems. It features a network outsourcing service, low-priced storage products and integrated operation monitoring/maintenance services. It also offers an integrated solution for enabling low introduction cost and integrated operations administration & maintenance services for storages, networks and WAN circuits.

2. Functions of the Storage Network Solution

2.1 Solutions Outline

In order to achieve low price and stable operation the UNIVERGE Storage Solution is made up of storage products manufacturer by NEC Soft, Ltd. and the following outsourcing services (**Fig. 1**).

①	Network design/construction service (Optimum network for BC/DR plans).

②	Storage service (Active use of NEC Software's storage products).

③	WAN circuit resale service (Selection of optimum carrier and circuit services).

④	Equipment rental service (Rental of network devices).

⑤	Operations administration & maintenance services

The network, storages and Operations administration & maintenance services are integrated and are provided as the UNIVERGE Storage Network Solution.
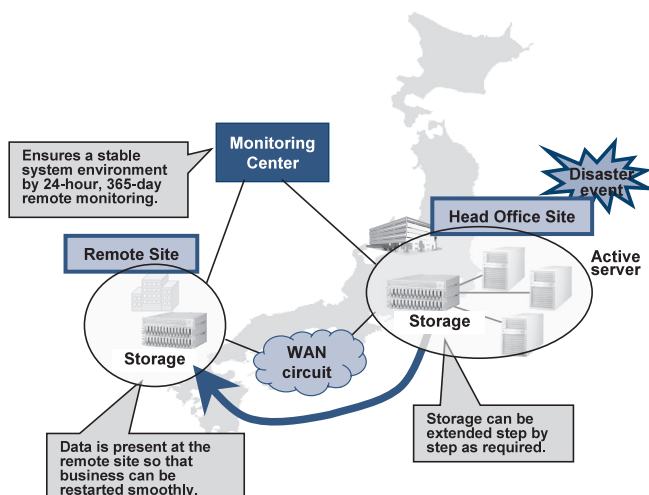

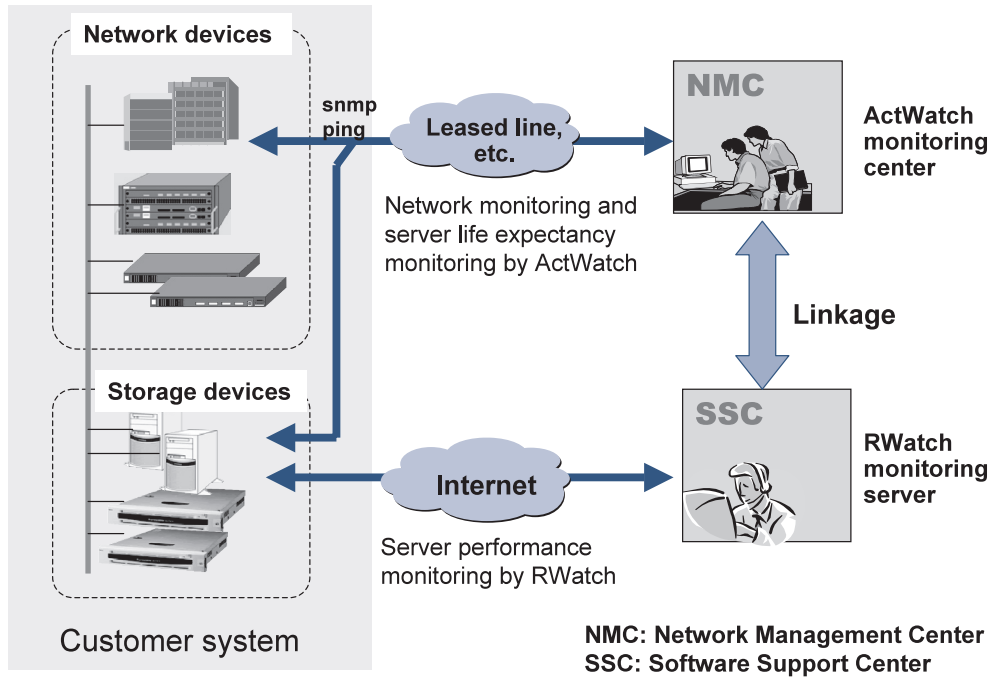Fig. 1 Configuration of storage network solutions.

Fig. 2 Example of monitoring service configuration.

(1) Integrated Monitoring and Operations Administration & Maintenance Services

The storage devices are monitored with the RWatch System and the network devices are monitored with the ActWatch System, which is also used for the integrated management of life expectancy monitoring related both to the equipment and the overall system. The entire range of solution products, from the storage to the network devices are monitored 24 hours a day, 365 days a year, in order to ensure the stable operation of the system. In the case of a fault, quick action is provided by making full use of the maintenance stations that are installed at 400 locations all over Japan (**Fig. 2**).

(2) Compatibility with Low-Speed WAN Circuits

While high-speed, bandwidth-guaranteed circuits and high-priced FC/IP converter equipment have previously been required, NEC Software's storage device (MelodiousStor) has been proven with low-speed WAN circuits such as NTT's B Fletz. This enables the building of a remote backup system using a circuit with relatively low running costs.

The storage devices are provided with a buffering capacity adjustment capability, so that it is possible to perform a circuit design independently from the access peak performance by simply adjusting the permissible transmission delay. The permissible delay time can also be adjusted to deal with any operational shutdowns due to circuit faults or to maintenance operations.

2.2 Outline of Storage Functions

NEC Software's MelodiousStor is used to enable storage of remote data backup at low cost and in real time.

This product offers the following effective functions at 1/4 the price of the equivalent model of the SAN storage products used previously for remote backup systems.

① Real-time learning function (Asynchronous mirroring sequence synchronized).

② iSCSI support that makes it possible to reserve storage areas in remote locations.

③ A built-in FC/IP conversion function that makes an external FC/IP converter unnecessary.

④ Quiescent point-synchronized marker transfer function for enabling backup

⑤ Virtualized storage capacity that makes the introduction of the minimum required number of physical disks possible.

⑥ Access speed increased using caches.

The system uses a large-capacity buffer that supports queuing of updating information and tolerates longer delays in

transmission to remote locations than previous systems. Thus, it does not need a high-speed circuit, as was required with previous systems. The real-time data properties and the use of circuit services with an optimum bandwidth and of a type that is compatible with the data properties also contribute to a reduction in the WAN circuit costs.

2.3 Example of System Configuration

We offer a low-priced disaster prevention solution that copies important data to a remote storage location (**Fig. 3**).

When data updating is being written in the Head Office site storage system, the updated data is written in real time in the storage of the remote site. This makes it possible for the data that was remotely backed-up immediately before a disaster event to be used to support the smooth continuation of business even when the Head Office system is experiencing a disaster event. This system does not need a high-band circuit for WAN communication between the sites, so it is not necessary to adjust the bandwidth according to the data updating peak. The WAN circuit can be designed flexibly, to include optional variations such as broad-area LAN. Critical sites may be equipped with redundancy storage devices, thus making the system applicable as a basic job solution.

In addition, the Solution also provides a system configuration to support the remote backup of the updated data in a disk built into the server as well as enabling one that supports remote backup using the IP-SAN connection.

3. Applications Fields

3.1 BC/DR Measures

The increased importance of enterprise data has led to the diversification of informational risks caused by data loss, including; 1) system shutdowns due to external factors such as earthquake, fire, flood or terrorism; 2) system faults such as those occurring in hardware, software and networks; 3) human factor damage due to operations mistakes, etc., and; 4) security risks related to cyber attacks by viruses, etc. As such damage is not restricted to primary damage such as in the loss of BC but also leads to more serious secondary damage such as a loss of social prestige for the enterprise, an increasing number of enterprises are considering employing the remote backup of data such as BC/DR measures.

Some enterprises are also studying the use of remote data backup systems aiming at improvements in their corporate value, including; 1) confidence building among customers from the viewpoint of CSR; 2) requests from customers as a result of the development of SCM, and; 3) competition of BC measures with other enterprises.

3.2 Integrated Management of IT Data

As the use of IT tools in business has grown and the quantity of data processed by enterprises and other organizations has expanded, increases in the management costs required for distributing the data via multiple servers has become an important
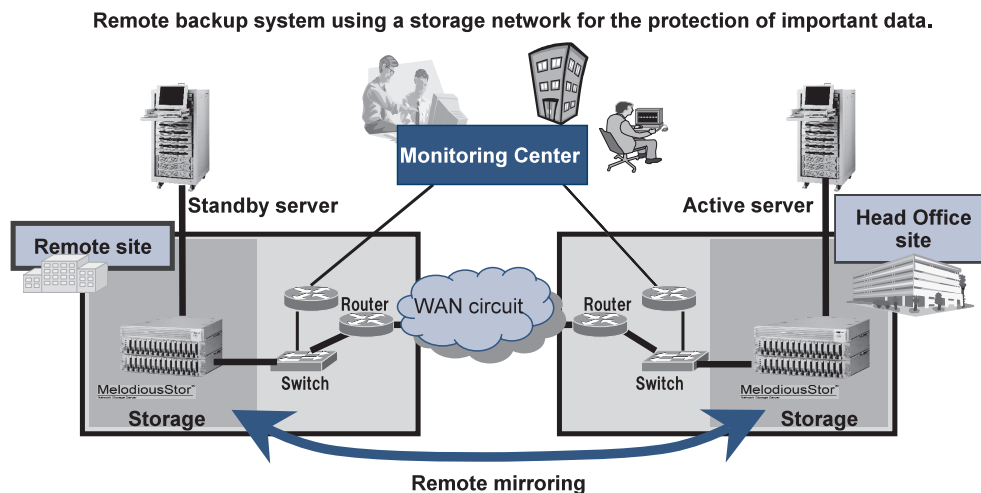
Remote backup system using a storage network for the protection of important data.

Fig. 3 Example of system configuration.

problem. The Storage Solution can also reduce such management costs by integrating the management of important data. In addition, its concentrated management methods also help to reduce the risk of information leakage caused by illegal access, etc., by improving management standards.

3.3 Types of Businesses Studying the Applications

Enterprises of various types are studying application of the remote backup system. These include manufacturing industries handling electronic components and automobile parts, the construction and construction consultancy industries handling CAD data, financial companies (banks, etc.) and broadcasting (TV shopping) handling customer data, local government, DC service companies and the pharmaceutical industry that needs to ensure distribution even during a disaster event.

4. Conclusion

As discussed above, the UNIVERGE Storage Network Solution offers a remote backup system for BC/DR measures at a low price. This service will facilitate more serious examination and its actual introduction by many enterprises and contribute to the promotion of network sales activities as well as the creation of system sales activities and the development of new markets. In addition, as the Solution can improve customer satisfaction due to its active use of outsourcing menus and the integrated provision of stable systems, it will also tend to stimulate effective business negotiations and thus expand the market. It is our intension to make every effort to promote the introduction of the UNIVERGE Storage Network Solution and to continue to improve its applicability as a solution.

Author's Profile

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