KAERI Information system integration, portalization method design and building

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1. Introduction

This dissertation aims to design and build solution that integrates and portalizes information system operated in research institution for nuclear energy in the aspect of hardware and software. 4 existing systems that each is operated as information system having different function and new 2 systems are reconfigured to 3 hardware systems. It is reconfigured so that it can be serviced in one integrated screen and personnel screen is provided. Effective management of system and portalization of service are performed.

2. Design of information system integration solution

In this chapter, existing information system is analyzed and effective link with newly developed knowledge management system and design of integration solution are explained

2.1 Analysis of information system

Existing information systems are composed of management information system, electronic sanction system, electronic book system, bulletin board system, website of research institute and portal system.

Websites are operated separately for these existing systems and only related service is provided. Systems are maintained for individual and separate development. Tough portal system is operated, users access to each different system with different ID to get required information depending on condition. Therefore, solution to integrate these systems organically and provide combined service is needed. And in case of legacy system operated for 5 years, improvement is required because its hardware is obsolete.

2.2 Hardware and software reconfiguration of information system

Existing operation server is equipped with 1 database server, 1 portal infra server, 1 portal middle server, and 1 forms server. To improve obsolete system, new 2 systems are introduced and applied as database server and portal infra server. Function of existing portal middle sever is changed to searching server

Portal Infra Sever is changed to Portal Middle Server by considering number of CPUs. For combined management of data in the near future, storage device is prepared newly. Its storage capacity is about 1.1 TB and DB Server, Portal Middle Server, and knowledge

management system use 530 GB respectively. Hardware configuration diagram is shown on Figure 1. Software is ORACLE 10g Database, AS10g Application Server, AS10g Portal Server, AS10g SSO (Single Sign On), and Oracle HTTP Server. Software configuration diagram is shown on Figure 2.
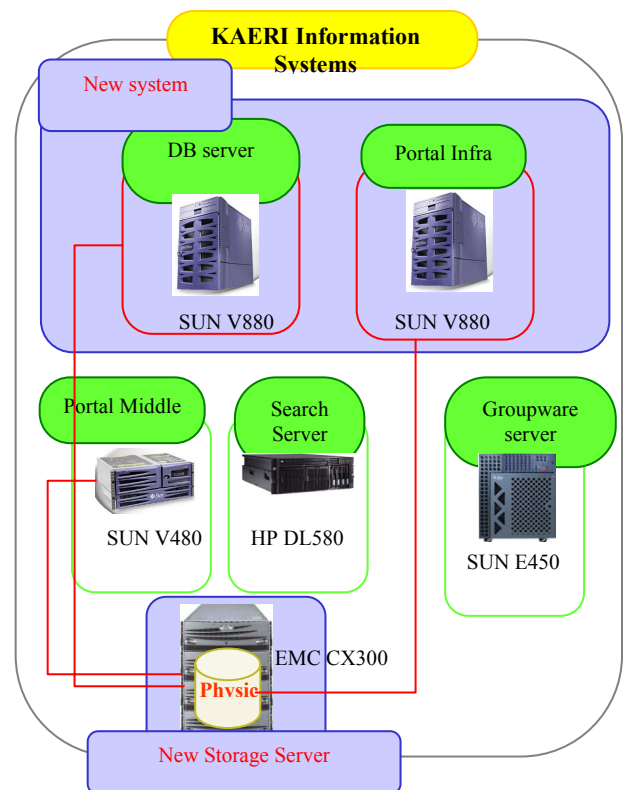

Figure 1. Hardware Configuration of KAERI Information systems

2.3 Portal service

Portal service with Portal/SSO and customization function is performed by using reconfigured hardware and integrated database server. Portal service has a function such as entrance of 5 websites and it means that user can access to it with one ID and get needed information on combined screen and find searched result related on websites, BBS, KMS, and book information system in one screen due to the integration of searching function. Moreover, MY HOME, the customizing function, which screens only required information out of all services provided by portal system, is enhanced. Right to use these services is distinguished as follows. For working system, it is classified as management, person in charge of

assignment, and general user and only the information allowed to the right is shown on. Newly developed KMS system uses one service environment, namely same HTTP listener, together with the system that has independent information or BBS.
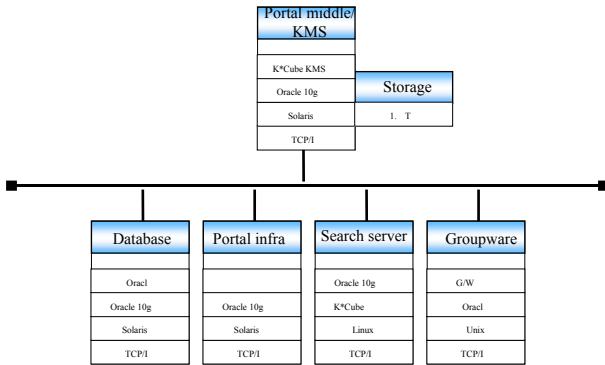

Figure 2. Software Configuration of KAERI Information systems

Portal & Knowledge Management System cnfiguration diagram is shown on Figure 3
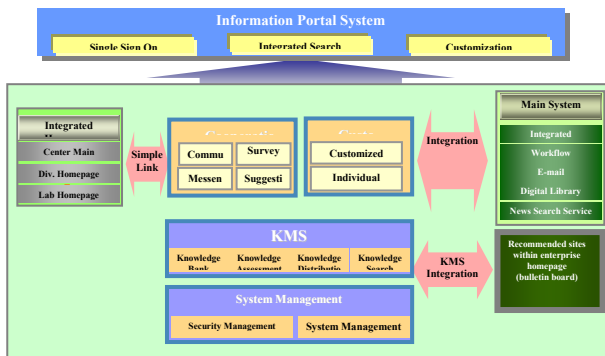

Figure 3. Portal & Knowledge Management System in KAERI

3. Conclusion

Integrated information system is operated at normal condition after 3 months of tuning period. After that, portal system can be operated. With number one priority, revision work is performed as per needs of users and hardware configuration is changed a little or tuning is performed according to access speed and server load.

In current information system, it is built by designing and applying solutions such as integration and transfer of each system.

Introduction of 2 new servers, development of knowledge management system and designing and building solution related on hardware reconfiguration make various information systems to be integrated into portal system and provide integration, personalization,

and customization of information by using SSO (Single Sign On).

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