

ETH ZURICH CHOOSES RED HAT ENTERPRISE LINUX AND RED HAT SATELLITE

International university boosts efficiency, flexibility, scalability.

ETH ZURICH

SOLUTIONS

Red Hat Satellite
 Red Hat® Enterprise Linux®
 Scalable File System Add-On
 Resilient Storage Add-On
 High Availability Add-On

HARDWARE

VMware ESX host IBM x3850 X5 with 4 sockets, 8 cores, and 1,024GB RAM
 ESXi 5.1.0 hypervisor
 Satellite VM with 2 vCPU, 8GB RAM, 40 GB Storage
 External NAS-Share for Satellite Repositories
 Externally hosted Oracle database

The decentralized IT infrastructure of ETH Zurich, a renowned institution with 16 different departments, made consolidation necessary in order to increase efficiency and reduce costs. With the introduction of Red Hat® Enterprise Linux® and Red Hat Satellite (previously known as Red Hat Network Satellite) as a sophisticated life cycle management solution, ETH Zurich can now enjoy efficient, flexible, and scalable operation of its centralized server environment as well as the workstation and server infrastructure in its departments, institutes, and professorships.



HIGHER EDUCATION

CUSTOMER SINCE
2004

“With Red Hat Satellite, our customers can manage their Red Hat Enterprise Linux operating system platforms with a high level of efficiency and flexibility.”

THOMAS RICHTER
 GROUP LEADER CLIENT DELIVERY
 FOR IT SERVICES AT ETH ZURICH



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REMOVING INEFFICIENCY USING CLIENT DEPLOYMENT SYSTEMS

ETH Zurich is divided into 16 departments, several infrastructure sectors, and administrative units. The university is home to almost 18,000 students and employs over 10,000 people.

The departments and institutes have broad discretion within their budgets for deciding how they want to structure and operate their IT systems in order to maintain their core competency in research and teaching. However, autonomously managed IT infrastructures demand significant financial and personnel resources.

The central IT Services infrastructure sector must deliver flexible and scalable information and communication technology services. In doing so, the ITS focuses on customer needs and uses its resources in a sustainable manner. A powerful IT infrastructure, stable operations, and reliable support are critical for the success of ETH Zurich as a leading university. IT Services collaborates closely with the IT organizations within the departments, providing them with shared tools for managing the workstation and server infrastructure.

Client deployment systems for Linux, Windows and OS X make it possible to efficiently and economically manage the heterogeneous server and client infrastructure using standardized solutions. They currently manage over 1,700 Red Hat Enterprise Linux clients, 440 Fedora clients, 6,100 Windows clients and 800 OS X clients.

FLEXIBILITY THROUGH POWERFUL SYSTEM MANAGEMENT

For Linux applications, the Client Delivery IT Services group uses Red Hat Satellite, a system management solution that provides all of the components necessary for a complete client life cycle management system. The platform can be used to provide software packages and updates, carry out configuration management, and provide, monitor, and deliver fully automated operating system installation of physical and virtual Red Hat Enterprise Linux servers and desktops over the network. Red Hat Satellite also boasts an easy-to-use web-based user interface. Its multitenancy capability enables the extensive delegation of functions to particular organizational units. Red Hat Satellite makes it possible to independently adapt the client systems and offers ETH Zurich a generous degree of flexibility.

The packaging of software products is another core service provided by this group. Software products are prepared so that install and uninstall processes can be carried out automatically without user intervention, and specific settings and configurations can be applied for ETH and each individual institute.

GUARANTEED VIABILITY THROUGH EFFICIENCY AND SCALABILITY – NOW AND FOR THE FUTURE

With the introduction of Red Hat Enterprise Linux and Red Hat Satellite, ETH Zurich enjoys flexible and scalable operation of its centralized server environment and of the workstation and server infrastructures at its various institutes. This choice establishes the foundation for an optimal response to future challenges.

“The automation of installation processes not only increases the quality of software distribution, it also saves time and reduces the need for support, thus reducing cost. By deciding to use Red Hat Satellite as the foundation for our Red Hat Enterprise Linux client delivery services, we planned to consolidate various deployment solutions. This consolidation is based on a centralization process,

without sacrificing the independence of our institutes' IT operations. And we successfully achieved this, thanks to Red Hat solutions," said Thomas Richter, Section leader of the Client Delivery group of IT Services at ETH Zurich.

By introducing Red Hat Satellite for the provision, scaling, and administration of Red Hat Enterprise Linux, ETH Zurich was able to centralize and remove inefficiency while carrying out the decentralized transfer of administrative tasks for computer management. Red Hat Satellite includes all of the tools necessary for efficient system management and flexible client management.

RED HAT INFRASTRUCTURE SOLUTION IS THE FOUNDATION FOR CENTRALIZED SERVICES FOR THE IT SERVICES

In the central IT Services infrastructure sector of ETH Zurich, the Hosting group operates a large number of systems and applications in multiple areas, listed in Figure 1. These systems and applications are hosted on 186 Red Hat Enterprise Linux 5 or 6-based servers, distributed as shown here:

SECTOR	RED HAT ENTERPRISE LINUX 5	RED HAT ENTERPRISE LINUX 6
Archiving Stores various documents from central services	3	0
Authentication and authorization Covers the centrally used AAI, LDAP, and Radius systems	5	9
Database hosting Makes Postgres and Oracle databases available to the decentralized units	10	4
Operative information system Makes various applications available to students and the rector's office	14	7
SAP System Used to administer finance and personnel	29	14
SPAM filtering system Manages majority of external mail traffic	5	0
Web hosting Controls the central web content management system with over 500 sites, and 130 web instances	53	33
Total	119	67

Figure 1. IT Services infrastructure sectors and their operating system environments.

"Thanks to the new Red Hat Academic Site Subscription campus licensing model, which we tailored to the university environment with Red Hat in early 2012, we have managed to significantly reduce administrative effort. IT system administrators at the institutes can use our services to lighten the



CUSTOMER CASE STUDY ETH Zurich chooses Red Hat Enterprise Linux and Red Hat Satellite

load when it comes to routine work, giving them more time to concentrate on research and teaching. With Red Hat Satellite we can very efficiently and flexibly manage our Red Hat Enterprise Linux operating system platforms. Moreover, Red Hat Satellite is easy to implement into a heterogeneous IT infrastructure like the one ETH Zurich operates. Unlike system management applications that are set up individually, the solution from Red Hat is more scalable and delivers more powerful performance – and this provides the investment protection and guarantee viability we need,” said Thomas Richter.

ABOUT ETH ZURICH

ETH Zurich is one of the leading international universities for technology and the natural sciences.

It is well-known for its excellent education, ground-breaking fundamental research and for putting its new findings directly into practice. It offers researchers an inspiring working environment and its students a comprehensive education.

Founded in 1855, ETH Zurich today has some 18,000 students from over 100 different countries, 3,800 of whom are doctoral students. About 500 professors currently teach and conduct research in the areas of engineering, architecture, mathematics, natural sciences, system-oriented sciences, and management and social sciences.

ETH Zurich regularly appears at the top of international rankings as one of the best universities in the world. 21 Nobel Laureates have studied, taught or conducted research at ETH Zurich, underlining the excellent reputation of the institute.

Transferring its knowledge to the private sector and society at large is one of ETH Zurich’s primary concerns. It does this very successfully, as borne out by the 80 new patent applications each year and some 260 spin-off companies that emerged from the institute between 1996 and 2012.

ETH Zurich helps to find long-term solutions to global challenges. The focal points of its research include energy supply, risk management, developing the cities of the future, global food security and human health.

ABOUT RED HAT

Red Hat is the world’s leading provider of open source solutions, using a community-powered approach to provide reliable and high-performing cloud, virtualization, storage, Linux, and middleware technologies. Red Hat also offers award-winning support, training, and consulting services. Red Hat is an S&P company with more than 70 offices spanning the globe, empowering its customers’ businesses.



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