

My responsibilities at Volvo IT

Assignment

Assignment	Volvo Information Technology, Dept 9153 - CAE Services
Date	2007-11-01 – 2009-02-28
	Supriya Mitra, 730204-5013

Job description

CAE Services is responsible for both supporting our customers with CAE (Computer Aided Engineering) solutions. Our customers are mainly Volvo group companies and Volvo Cars.

The CAE area is developing rapidly and the usage of IT solutions is becoming an even more integrated and important part of future automotive development projects. Therefore this is a prioritized area and we have a lot of exciting challenges ahead of us.

Job description

We are working in the area of CAE and the area of Testing tools for validation of mechanical design. The CAE analysis includes CFD (Computational Fluid Dynamics), safety (crash analysis), durability, noise and vibrations, and vehicle dynamics. We support our customers in creating and integrating CAE commercial solutions to be used by calculation engineers (analysts).

In this work you will implement and support commercial applications (CAE and testing tools) in the Volvo Group environment. The work also includes developing and maintaining the computer environment in which the CAE applications are executed. You will have close contacts with our users (analysis engineers) as well as our vendors.


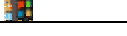
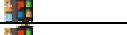
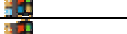
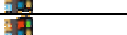





A successful candidate should:

- Have interest of computerized simulations. If you have been or are today working as an analysis engineer with focus on simulation it would be a valuable experience.
- Have interest in IT work and IT solutions within the simulation area
- Have an interest and knowledge of Computer Systems
- Have ability to work both independently and in group
- Be good in communication with both customers and users
- Have an open attitude and to be proud in supporting our customers
- Like challenges and have the ability to easily learn new technology and methodology.

Additional valuable knowledge:

UNIX, Script (ksh, perl etc.), Web-applications and Java.



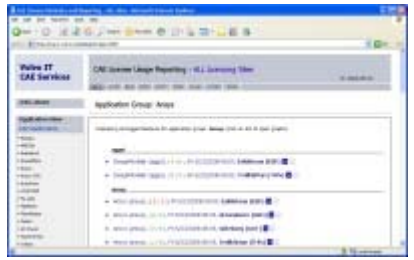
Application maintenance & support

Application	Company	Platform		
Matlab	Mathworks Inc.		responsible	Aug 25, 2008 -
Labview	National Instruments		responsible	Aug 25, 2008 -
AutoSEA VaOne	ESI Group		responsible	Dec 14, 2007 -
DiaDem	National Instruments		responsible	Aug 25, 2008 -
FlowMaster	FlowMaster Inc.		responsible	Dec 14, 2007 -
Kuli	Magna Steyr, ECS		responsible	Dec 14, 2007 -
Animator	GNS mbH		responsible	Dec 14, 2007 -
Adams/Patran	MSC Software		responsible	Dec 14, 2007 – May 13, 2008
Hubstrength	Stress & Strength		responsible	Dec 14, 2007 – May 13, 2008
Madymo	TNO Automotive		responsible	Dec 14, 2007 – May 13, 2008


License administration

Seemage	Delmia	Cad-Doctor (nonflex)	Rhapsody
TargetLink (wine)	Fieldview	Ansa/Meta (nonflex)	Tasking
Diab	Glyphworks	Ansys	Siemens PLM
Hyperworks	Star-CD	Radtherm	SimLab

Software Development

Software		
LUMstat	<p><i>Web-application based on Java/Tomcat showing realtime and historical reports of Catia license usage. Backend data collection is performed by kornshell/awk.</i></p> <p>I did further development including many bugfixes and enhancements according to customer instructions.</p>	
CAE Software DB	<p><i>Web-application database based on Java/Tomcat & MySQL used by application managers and economy dept. for storing information about software, suppliers, producers, licenses, support contacts, quotes, configuration and purchases etc.</i></p> <p>I did further development including many bugfixes and enhancements. I also added complete editor documentation and step-by-step instructions.</p>	
Global CAE statistics	<p><i>Web-application based on PHP showing realtime and historical reports of all CAE applications world-wide license usage. Backend data collection is performed by kornshell/awk and rrdtool.</i></p> <p>I did further development including many bugfixes and enhancements, introducing features such as the globalic-ssh solution, increasing stability for long distance datatransfers and saving important processing time.</p>	
Monthly reports	<p><i>Framework based on kornshell/awk and SAMreport that generates monthly license usage summary reports from all application logfiles and encrypted FlexLM reportlogfiles world-wide.</i></p>	

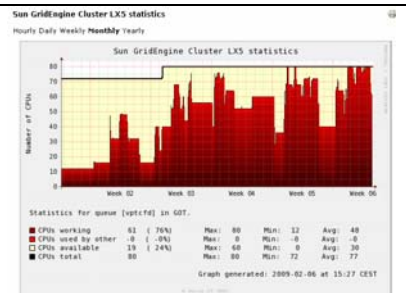
	I did further development including many bugfixes and enhancements introducing support for some new rare license logfile formats.
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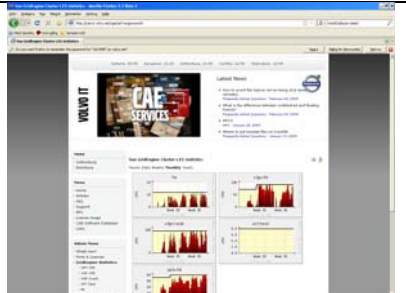
Pro/Engineer statistics Released: Nov 11, 2008	<i>Web-application based on PHP showing realtime and historical reports of Pro/Engineer license usage worldwide. Backend data collection is performed by kornshell/awk and rrdtool.</i>	
	I converted the application from mrtg to rrdtool, optimized the backend - reducing processing time to only 8 seconds (was 3 minutes). I also introduced a detailed 5 minute and a longterm 5 years graphs.	

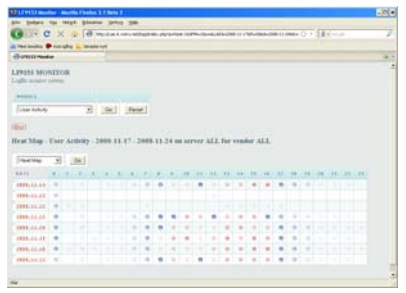
Rsync for Nastran Released: Feb 12, 2009	<i>Startscript for nastran jobs on our calculation cluster based on kornshell/awk.</i>
	I added support for rsync filetransfers prior to calculation (input) and also a continous rsync transfer (output) during calculation for immediate updates to the remote end.

Rsync for Radioss Released: July 28, 2008	<i>Startscript for radioss jobs on our calculation cluster based on kornshell/awk.</i>
	I added support for rsync filetransfers prior to calculation (input) and also a continous rsync transfer (output) during calculation for immediate updates to the remote end. Mainly used for large filetransfers to Bangalore and was very much requested and appreciated.

Rsync for Caesys Released: Nov 24, 2008	<i>Caesys is the framework based on kornshell built for starting software and submitting jobs to the calculation clusters. Distributed globally and well thought out, it allows re-use of components while allowing full power for site administrators to override code.</i>
	I created a powerful and very simple-to-use rsync library into the caesys framework allowing any script to use the benefits of rsync in a standardized way. In addition i also added code for continous rsync transfers while calculating including full documentation and examples.

Sun GridEngine statistics Created: Nov 3, 2007 (inofficial)	<i>Web-application based on PHP showing realtime and historical reports of CPU usage on our Sun GridEngine calculation cluster. Backend data collection is performed by perl and rrdtool.</i>	
	This tools was completed just 2 days after arriving to this assignment. I created it in order to learn about Sun GridEngine. It is not official, but administrators use it for live monitoring and to get a historical view of the cluster usage.	

CAE homepage Released: Nov 20, 2008 (inofficial)	<i>Content Management System based on Joomla containing articles, FAQs, links, support forms, statistics and information to end-users.</i>	
	I created a new homepage, with fresh design. The purpose was to let users easily add contents. Userlogin was implemented using ldap/ssl. Large portions of my documentation can be found as articles or faq items into this website.	

LF9153 log analyzer Released: Apr 1, 2008 (inofficial)	<i>License monitoring system based on PHL. Backend data collection is performed by Perl, Ldap & MySQL.</i>	
	I built this powerful web-application due to the lacking of competent tools to analyze FlexLM debuglogfiles. Presentation is very innovative using heatmaps, treeviews with an ajax-based user experience. Features include detailed user and hostname graphs/statistics, license expiration warnings and some unique reports based on grouping of users by dept and organization.	

System administration

GTWine Released: Aug 14, 2008	GTWine is a hack I made to GT-power + a 3 rd party windows dll plugin, allowing our engineers to use it remotely on much more powerful linux servers or on the cluster. This was achieved by setting up a remote linux solver environment and using a wine-based solver executable on top. An advanced, fully automated setup, including complete documentation, data verifications and examples. An interesting sidenote was that the wine-based solution performed faster than the native linux binary.
TargetLink/Wine Released: Feb 10, 2008	TargetLink/Wine is a hack I made to the Targetlink licenseserver for Windows. This allowed us to run the license server on linux hardware using wine, saving much costs for maintenance and administration. License-server has been running flawlessly for almost a year now.
MySQL	Administration, design, development of procedures and query optimizations.
Apache/Tomcat	

Support Helpdesk

CAE Helpdesk – Support by phone.	responsible
CAE Helpdesk – Support by e-mail.	
CAE Helpdesk – Support by vinst.	Support Team Manager, May 13, 2008.

Skills used

Keyword	Used where	
Java/Eclipse/Tomcat	LUMstat	
	CAE Software DB	
Kornshell/awk	Application startscripts	
	Global CAE statistics	
	Monthly reports	
	Pro/Engineer statistics	
	Rsync for caesys framework	
	Rsync for radioss	
RRDtool	Global CAE statistics	
	Pro/Engineer statistics	
	Sun GridEngine statistics	
Perl	LF9153 log analyzer	Installed a completely independent non-root perl environment on solaris 8 due to outdated perl and needed full access to perl libs and cpan archive.
	Sun GridEngine statistics	
PHP	Global CAE statistics	
	Pro/Engineer statistics	
	CAE homepage	
MySQL	LF9153 log analyzer	
	CAE software DB	
	CAE homepage	
Wine	GTWine	
	TargetLink/Wine	
FlexLM	License administration	Including samsuite and samreport.

Documentation		Documentation for most systems.
Support	CAE Helpdesk	Phone, E-mail & Vinst. Supporting users in english language from all the world including Sweden, India, France & North America.
Linux	Desktop & Server	
Solaris 8/10	Desktop & Server	
CAE Desktop Environment		

Feedback

Bt Owen, CAE Systems Engineer, Volvo 3P, Greensboro, United States

"Thank you for your EXCELLENT effort in giving me an answer on this so quickly after your return. I know you have lots on your plate after being out of the office. I recognize this good work!"

Ali Moataz, Product Development, Volvo Technology, Göteborg, Sweden

"Now we are in business. Excellent job."

Pranesh Seshamurthy, Assistant Manager, Volvo IT, Bangalore, India

"Hey Supriya, You are God in rsync and making these automated scripts work !! Thanks a lot for identifying the bug and helping me in fixing it. Other automations like Nastran, radioss, Abaqus are very very helpful . Thanks again for all the help. It was wonderful working with you & sorry for the troubles given to you from VIT India ☺"

Ross Deves, Manager – Mack Product Engineering, Wacol, Australia

"Many thanks - you work very fast!"

History

Assignment ended	2009-02-28
Responsible for training Elahe	2009-01-15
Responsible for support by phone	2008-10-10
Responsible for Matlab & LabView	2008-08-25
Responsible for CAE Software DB + LUMstat	2008-05-15
Responsible for GlobalLic & ProE statistics	2008-05-15
Appointed Vinst Support Team Manager	2008-05-13
Responsible for Animator, AutoSea VaOne, Flowmaster, Patran/Hubstrength, Kuli, Madymo	2007-12-14
Vinst training completed	2007-11-14
CID-C training completed	2007-11-08
Assignment started	2007-11-01