Technical Volunteer Projects

Request Tracker Serial Number: 1057
Subject: investigate using twiki for managing vcn help pages

VCN's cluster of help pages is a collection of static html pages which need to be updated and maintained through the efforts of a group of people. Past efforts to update the pages have been slowed by the absence of revision control and a common working platform. b. TWiki (www.twiki.org) is an open-source web-based group collaboration tool which can be used to help a group of people 'grow' a website. The default installed version of twiki includes a complicated set of 'webhomes', which make it hard to smoothly define one's own webhome. Also, the process of converting an existing set of web pages to work under twiki does not seem straighforward. c. A recent summer student attempted to resolved these issues, but his term ended before substantial work was done. Although some issues were ironed out, they were yet to be prototyped and their solutions remain undocumented. -- 1. Investigate how the default twiki configuration can be revised for VCN's purpose. 2. Investigate how the existing set of VCN help pages can be converted to work under twiki. 3. Investigate how twiki can be packaged for easy adaptation by a community group for use in its website.

Request Tracker Serial Number: 1040
Subject: volunteer tracking database

A volunteer tracking database is needed to help VCN's volunteer administration. We have decided to develop our own application instead of buying a commercial product, and a quick search for an open-source application showed nothing interesting. 1. The vt program would use Access 2000 as both a design tool for the database and a front end to access the tables. Access would include functions related to volunteer administration and reporting. 2. The database tables would be hosted on VCN's mySQL database server. 3. A CGI program would help potential volunteers to submit a volunteer response form, which would be added to the database. The CGI program would also help certain volunteers update their shift activities on the helpdesk.

Request Tracker Serial Number: 1048
Subject: prepare two application servers for H101 lab

a. VCN has agreed to help the Humanities 101 society prepare a computer learning lab in the downtown eastside. The lab would have the capacity for 30 workstations connected over a local area network in a single large room. The LAN would be connected to the Internet via ADSL and a firewall/router. b. VCN has proposed that the lab workstations would be donated 486 computers with 16MB RAM (Seanix donation from VPL), in order to avoid the high costs of buying Microsoft licenses and having higher end computers to properly work.

The 486 workstations would boot over the network and execute open source applications from a Debian server. The cost of the lab would be primarily focussed on the equipment costs of the application server, of which there will be two identical units. 1. The two application servers will need to be installed with Debian 2.2, the Linux Terminal Server software, and a suite of open-source applications. 2. A suite of open-source system administration tools would need to be installed. 3. Some consideration of user account registration and management would need to be done. 4. A load test of the lab configuration would need to be done in order to prove that a full class scenario could be handled. 5. Documentation of the server configuration and operating procedures would need to be done.

Request Tracker Serial Number: 1045
Subject: investigate ways to monitor 411 and H101 public labs

1. The 411 lab consists of 16 workstations running Windows 95/98. They are connected together using 10Mbps Ethernet using the VCN's office router as the Internet gateway. Currently the 411 lab is not monitored in any way. We have no pre-emptive way of knowing the traffic load nor the health of the Windows workstations. 2. The H101 lab will consists of 30 diskless workstations, running Debian Linux applications from an application server. It would be beneficial to develop some easy ways of monitoring the traffic load and health of the Linux workstations in this lab. -- a. Investigate methods and tools of monitoring traffic load and congestions on the 411 lab. Examples of some tools would include: ethereal, etherman, etherape, etc. Provide a reporting mechanism for alarm conditions and an interface for long-term results, perhaps over the web. b. Investigate using SNMP to monitor the Windows workstations. Load the SNMP client into each station and provide an SNMP server, either on a standalone Windows computer, on the Debian office server, or on a standalone Macintosh computer, to do periodic enquiries. Provide an interface to display diagnostic results, perhaps over the web. c. Perform the same investigation for the H101 network and workstations.

Request Tracker Serial Number: 1053
Subject: enable Macintosh computer to share files on office network

Currently, Macintosh computers connected on VCN's office network cannot share files with the fileserver in the same way that Windows computers can. Also, the same problem occurs on CAP sites which use both Macintosh and Windows computers. The enabling technology which could make this happen is installing netatalk on the fileserver and making it work with the samba server. This would enable a Mac to share files and resources with a Windows computer via the samba server.

Request Tracker Serial Number: 1035
Subject: childcare jobs online database

VCN's role in a partnership project with the WestCoast Child Care Resource Centre is to help them create a jobs database. The jobs database would help child care givers find employment within the BC region. We have had several meetings with them and they have given us a US website that they thought was a good example. 1. Some preliminary work on the database design and search and browse templates have been done. The next phase of this job is to take the prototype into completion and demonstrate it to WCCRC, who would then demonstrate to others.

Request Tracker Serial Number: 1027
Subject: Surrey questionnaire results database

We have received a request from Suzanne Klinga, the project proposal co-ordinator for the Surrey Self-Advocacy Learning Network, to place the results of a questionnaire they have conducted on a public website. The results are currently formatted in a structured Word document. 1. Create a one-table database in mySQL to hold the questionnaire results and import the data into it. 2. Create CGI forms to search and browse the database and show the results in html pages.

Request Tracker Serial Number: 1005
Subject: get squirrelmail ready for public use

Currently, a php webmail program called 'squirrelmail' is installed and working at 'mail.vcn.bc.ca'. Before we can release it for more public use, we need to tweak its configuration and add in a set of useful plugins. 1. The default installation uses the file system for holding user profiles. This will not scale well when thousands of users are using it. Is there an alternative, such as using a database or a directory? 2. Third-party contributors have developed a large set of plugins. We need to identify the ones that are useful for VCN and install and test them. 3. We need to identify the log files associated with squirrelmail and develop a log rotation strategy.

Request Tracker Serial Number: 1026
Subject: create a public access web-based directory

a. Currently, VCN has helped setup seven public access (CAP) sites in Vancouver and is about to setup about 20 more in the Greater Vancouver area. Also, there are several other public sites which are started by other nonprofits in the same area. b. In the short term, VCN has also agreed to make a web-based list of public access sites in the Surrey area as part of the preparation of their proposal to prepare an application for a community learning network. Preliminary data for the Surrey list has been collected by Peter Royce in a structured document. 1. Create a simple one-table database to collect entries, using mySQL as the

database server. 2. Create a series of CGI forms to search, browse, and edit records in the database. Populate the database with initial data from Surrey and VCN's CAP sites. 3. The forms and result pages would be part of a standalone website that would be linked to from various other sites, such as VCN's. There would need to be a small set of html informational pages that would lead into the CGI forms.

Request Tracker Serial Number: 1256
Subject: financial planning spreadsheet

Currently, the VCN uses a detailed Excel spreadsheet to allocate expenses against revenue for budgetting and planning. The figures are to be migrated to the Simply Accounting tool for budgetting reports against actual spending. However, there is no easy way to take 'snapshots' of current spending and load them into the Excel spreadsheet so that re-allocations can be done. This would be beneficial if, for example, a new project is started in the middle of the fiscal year or a re-allocation of expense items is needed. 1. Investigate methods of exporting data from Simply Accounting. 2. Investigate methods of importing data into Excel spreadsheet. 3. Investigate methods of transforming the accounting data into the rows and columns of the spreadsheet, so that the current data in the spreadsheet is modified by the data from the accounting books. This could be achieved if the accounting data were put into an access database and a series of transformations applied by the use of visual basic scripts and other methods before they are imported into the spreadsheet. 4. Investigate how the process can be automated, such that a person can automatically update the spreadsheet by the current accounting information before the person starts a budget planning session.

Request Tracker Serial Number: 991
Subject: redo VCN's community index using a database

Currently, the community index at www.vcn.bc.ca/community uses a series of static html pages, making it labour intensive to update and modify. 1. It would be better if a database of the links along with important information about them were created and to have each subject page built dynamically. 2. We should also accumulate incoming link requests into the database and have it show on a html page for validation; the validator would then check the link request and if it fulfills our criteria, it could be activated. 3. Also, the details of each subject page, for example, title, meta keywords, meta description, should be stored in a database table for easy maintenance. When a subject page needs to be displayed, it would be built dynamically from information in the table.

Request Tracker Serial Number: 1002
Subject: install procmail in mail server to act as a spam filter

Currently, there is no spam filtering that is centrally configured for catching the commonly occuring spam. It would be beneficial if procmail was quickly installed and minimally configured to catch the common spam. It would be installed at the tail end of sendmail's delivery process, just before it delivers users mail to their inboxes. Filtered mail shouldn't be deleted but logged for inspection in case our filter rules need to be tweaked. We can gain the experience of another ISP's configuration settings and go from there.

Request Tracker Serial Number: 1004
Subject: investigate IPX machine as a radius and user registration server

a. Currently, we have an unused Sun IPX computer, which is comparable in processing power to a Pentium 100 (according to its specs). We need to investigate whether it can be made useful by functioning as the primary radius server. If so, then we can uncouple this function, which authenticates dialin users, from the main servers. b. Currently, both main services and dialin authentication occur in the same server; if the main server goes down, no dialin users can get authenticated, even though most of them for much of the time just want to get access to the Internet gateway for browsing. 1. We cannot use Solaris 8 operating system with the IPX, but we can try to load it with the current version of NetBSD. 2. We should install gnu radius, an open source version of the radius server software, and try to make it work with IPX/NetBSD. If not, then we install the same simple radius server that we are currently using. 3. We should also install openLDAP and make it ready to act as the main user directory. This directory would be a redevelopment of our user registration system. We would want to combine it with the radius server and to tightly secure the machine from potential access from shell users and others. 4. We should install webmin.

Request Tracker Serial Number: 1007
Subject: add a monitoring server to backup.vcn.bc.ca

Currently, we have a cluster of main servers that is largely unmonitored. We also have an underutilized backup server sitting on the same LAN. We also have subscribed to a telus mobility paging service and own a pocket pager that is currently not being used. 1. We need to install some sort of monitoring software in backup.vcn.bc.ca machine so that it can ping our essential services (eg, httpd, mysqld, named, innd, radius, etc). 2. If there is an alarm condition, the monitor should send an email to the pager. There should be a sensible coding system to succintly indicates alarms and levels of severity. 3. The monitor should make its results available on a realtime web interface. The web server could be on one of the main servers, or the backup machine could function as the web server. 4. The monitor should also try to periodically scan tcp/ip ports for signs of possible intrusions, but only if this activity does not load down normal activities. 5. We should investigate if the monitor can also monitor some rudimentary traffic statistics on the local area network.

Request Tracker Serial Number: 1037
Subject: Migrate VCN membership database

Currently, VCN's membership database (money.mdb) is implemented in Access 2. It would be more beneficial if the database could be converted into the current version of Access 2000. It would even be more beneficial if the database could be hosted on VCN's mySQL database server and have the Access 2000 act as a front end to the linked tables. This would allow easy access to the same tables from perl scripts on the main server; it would also make it easier for us to redevelop the membership database as a web-based application. 1. Convert money.mdb from Access 2 to Access 2000 and convert the membership database computer to use Access 2000. 2. Migrate the tables to mySQL server and have the Access 2000 act as a front end to the linked tables.

Request Tracker Serial Number: 1050
Subject: make office server work as a fax server

a. Currently, the office server is one of two Debian servers on the VCN office LAN. (The other is the file server.) It recently had to be rebuilt because of software corruption and its only role at the moment is to house the CDRW unit. b. Staff working on their desktop computers cannot easily use their computer to send faxes, because of the amount of RAM it requires and that it would tie up one's telephone line during the process. -- 1. It would be beneficial to make the office server have the ability to spool fax jobs and send them over the VCN fax line (257-3808). A typical job would be a document produced from a desktop computer connected on the office LAN. The user would send the document to the fax server and have it fax it on its own time. 2. Another beneficial job would be to have the fax server be able to receive faxes and automatically printed on the network printer.

Request Tracker Serial Number: 1310
Subject: Multi-Router Traffic Grapher

a. The Multi-Router Traffic Grapher was installed on the main server awhile ago, but since the rebuild at the end of May, it has not been working. MRTG was graphing four sets of data: 1) number of dial-in connections, 2) traffic statistics at the dial-in modems, 3) number of open problems in the major Request Tracking queues, and 4) voltage fluctuations of the Uninterruptible Power Supply in the server room. b. The working environment of MRTG consists of an adminstration account 'mrtg', installation directory (and the home directory for 'mrtg') at /usr/local/mrtg, and configuration files and generated html pages at /www/mrtg. A perl script at /usr/local/vcn/snmp is used to query the dial-in routers using the SNMP protocol and arrange the answers into MRTG format. -- 1. We need to update the installation from version 2.9.12 to the current version (2.9.17) and to get MRTG running again on the main server. 2. We need to refine and adjust the configuration files.