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Bacula Systems is the leading Enterprise Open Core network backup and restore software company, combining Bacula's enterprise-class open standards software with first-class support and professional services. Leveraging the millions of downloads of the community project, Bacula Enterprise is by far the most popular Open Core software solution for network backup, data recovery and protection of computer data. Our software offers up to ten times lower total cost of ownership compared to proprietary solutions, higher reliability and proven performance in mission-critical enterprise environments. Bacula Systems provides world-class technical support, renowned training courses, and Bacula Enterprise Edition products via the Bacula Systems Subscriptions. Bacula Enterprise Edition is a set of subscription-based enterprise data backup solutions which empower data centers to truly escape data volume price traps. High numbers of enterprise organizations worldwide (incl. NASA, Bank of Austria, Swisscom or Sky PLC) have adopted Bacula Enterprise backup software in mission critical environments because of its advanced features and ability to handle high data volume at very low cost. Large enterprise IT departments now have an open core, certified, enterprise data backup software solution as a better alternative to proprietary offerings. Bacula Enterprise Bacula Enterprise is the best broad enterprise data backup software solution for medium and large businesses. It has an especially broad feature range, is very customizable, and offers advanced, fully integrated features for backing up VMware, RHV, Hyper-V, KVM, Xen, VMware, Kubernetes, OpenShift, Docker and much more. Bacula Systems is the leading backup and recovery solution reviewed on TrustRadius. Its software architecture is built to provide higher levels of protection against Ransomware and other malware than any of its competitors. It also offers massive scalability, lower costs and seamless connectivity with disk, tape, robotics, and other storage. It's hybrid cloud compatibility and features are industry leading, and it support services are simply outstanding. Bacula Systems customers include NASA, Texas A&M University, Swisscom, Sky, Turner Studios, Siemens and many more. 3,694 followers 1h : When it comes to backup systems, even a small misconfiguration can lead to big problems. Thats why BGuardian, Baculas intelligent backup validation tool, is a game-changer for sysadmins. BGuardian ensures that your backups are configured correctly before theyre needed, helping you avoid potential issues during recovery.Heres how BGuardian keeps your backups safe: 1 - : BGuardian catches misconfigurations early, preventing costly downtime or data loss. 2 : It runs automated tests to ensure backups are properly configured and ready for a restore. 3 : With proactive error identification, you can rest easy knowing your backups will perform as expected. 4 : Simply add BGuardian to your Bacula setup for continuous monitoring and reporting. : Set up BGuardians regular checks to run alongside your backup schedules to ensure every backup is fully validated.Want to know more? Check out how BGuardian can help protect your backups: Contact us for more details. #Bacula #BackupValidation #SysAdminTips #DataProtection #DisasterRecovery 3,694 followers 2d ? Bacula Enterprise provides advanced encryption, offline storage, and multi-layer security protocols to protect your data against ransomware. : - Robust encryption (AES 128/192/256, Blowfish)- Multi-factor authentication (MFA)- Immutable storage options- Bare metal recovery for both Linux and Windows Stay one step ahead of cyber threats with Baculas cutting-edge security design. : #CyberSecurity #RansomwareProtection #BackupSolutions #DataSecurity #BaculaEnterprise 3,694 followers 1w , , -: No matter your environment, Bacula Enterprise offers unmatched flexibility for backup and recovery. Whether youre deploying entirely on-premises, in the cloud, or a hybrid setup, Bacula seamlessly integrates across all platforms, providing: -: Fully deployable in the cloud or on-prem : Best of both worlds with cloud + on-prem integration : Secure backups across all environments - : One solution for diverse IT infrastructuresTake control of your backup strategy with Baculas multi-environment compatibility. Optimize your disaster recovery and reduce costs across cloud, hybrid, and on-prem deployments. Learn More #HybridBackup #BaculaEnterprise #MultiEnvironment #DisasterRecovery #DataProtection 3,694 followers 1w Baculas integration with ZFS offers unmatched efficiency, speed, and data protection for enterprises and high-performance computing (HPC) environments. By leveraging ZFSs powerful snapshot capabilities, Bacula ensures low-latency backups and quick recovery, all without impacting system performance. Key Benefits: Snapshot-Based Backups No impact on system performance Fast Incremental Backups for Huge Data Volumes Advanced Data Protection, Encryption & Ransomware Protection Cost-Efficiency through Deduplication & Compression Bacula is here to transform your ZFS backup strategy with enterprise-grade security, scalability, and cost savings. Learn More About Bacula + ZFS Integration #Bacula #ZFS #BackupSolutions #DataProtection #EnterpriseBackup #DataSecurity #HPC 3,694 followers 1w : 5 When managing massive backup environments, performance tuning isn't just about handling larger datasetsits about ensuring reliability and speed across complex infrastructures. Here are five expert steps to optimize Bacula for high-scale environments:1 : Increase the number of concurrent jobs by adjusting the Maximum Concurrent Jobs parameter in the Director configuration. This allows Bacula to handle multiple backups simultaneously, reducing overall backup time. However, ensure that your hardware (especially storage devices) can handle the load.2 : Performance can be boosted by increasing buffer sizes in the Storage Daemon. Adjust the File=BufferSize parameter to allocate more memory, which can help speed up I/O operations for large datasets, reducing latency.3 : For environments with remote or cloud backups, ensure that Bacula's bandwidth settings are configured to avoid network congestion. Use the Maximum Bandwidth parameter to throttle bandwidth and prevent your backup jobs from affecting other critical network operations.4 : Bacula's deduplication and compression features can drastically reduce storage usage, but they can also impact performance. Test and fine-tune these features to find the right balance between performance and storage savings, particularly for large data environments.5 : Scheduling large backup jobs during off-peak hours reduces the chance of system slowdowns. Use Bacula's advanced job scheduling options to prioritize critical backups while spreading others over longer windows, ensuring minimal impact on system performance. : Use the Bacula Monitoring Dashboard (BWeb) for continuous tracking of backup performance metrics. Regular analysis can help you quickly identify slow jobs or resource bottlenecks, letting you make adjustments before issues escalate.#Bacula #SysAdmin #PerformanceTuning #BackupOptimization #EnterpriseBackup #DataManagement #TechTips 3,694 followers 2w : Are you dealing with Bacula client authorization errors or connection issues? These can often be caused by simple configuration mismatches or overlooked settings. Heres a breakdown to help you pinpoint the issue:1 : Bacula requires matching names and passwords across all componentsDirector, File daemon, and Storage daemon. If you change a name or password in one file, make sure to update it across the board. Also, remember to avoid exceeding the Maximum Concurrent Jobs limit, which can cause Bacula to reject new connections.2 : Check for issues with DNS resolution, firewall settings (blocking ports 9102/9103), and incorrect credentials. If connecting to a Windows client, make sure the Bacula service is running and the system tray icon is visible. Consider restarting the Bacula service or verify the File Daemon and Storage Daemon connection settings.3 ( ) : If VSS is hanging, running vssadmin and testing with ntbackup can help determine whether the issue is within Bacula or the Windows machine. Ensure that firewalls or misconfigurations (e.g., MSDEWriter) arent causing problems.4 : For in-depth troubleshooting, use the -d (debug) option in the Bacula client or daemon. This will allow you to examine output in real-time and understand whats causing a failure.5 : Adjust the Maximum Network Buffer Size and check for faulty Ethernet drivers to improve backup transfer speeds on Windows systems. Also, be aware of anti-virus programs that might block Baculas actions during backups.By addressing these common issues, youll be able to resolve connection and authorization errors quickly. Make sure to follow Baculas recommended configurations to avoid pitfalls. : Use Baculas built-in diagnostics and logs for real-time troubleshooting and prevention. Always ensure your configuration files match up and avoid excessive job concurrency to keep your backups running smoothly.#Bacula #Backup #Troubleshooting #SysAdmin #BackupSolutions #ITSupport #DataRecovery 3,694 followers 3w Bacula at ISC 2025: Performance-Driven Backup for HPC Get ready to meet Bacula at ISC Hamburg 2025! Visit us at booth L39 and discover how Baculas backup solution protects high-performance computing environments and resolves the challenges of today - and tomorrow. Whether youre managing billions of files or need ultra-fast backups, Bacula has you covered! Dont miss the chance to learn more about Bacula's exciting upcoming announcements about high performance file system integration, and chat with our HPC backup experts. Find out more here - . #Bacula #ISC2025 #HPC #BackupSolutions 3,694 followers 4w (-) As system admins, we constantly juggle between data protection, storage efficiency, and seamless backup processes. One of the most effective solutions? Baculas Progressive Virtual Full, Incremental Forever (PVF-IF) strategy. -? Reduces storage requirements Automates incremental consolidation Enhances performance with Global Endpoint Deduplication (GED) : Job Template Automate post-job tasks & retention policies Pool Configuration Manage smooth transitions between volumes Storage Resource Setup Optimize volume size & recycling Scheduled Jobs Maintain backup consistency By fine-tuning scripts, pools, and job templates, PVF-IF ensures efficient, cost-effective backup managementa must for large-scale environments. Curious about the exact steps? Lets discuss how you optimize your backups! #Bacula #BackupSolutions #SysAdmin #DataProtection 3,694 followers 1mo System crashes are inevitable, but downtime doesnt have to be! With Baculas LinuxBMR Plugin, you can restore entire Linux servers quickly and efficiently. A proper Bare Metal Recovery (BMR) setup ensures minimal disruption; test your backups, monitor logs, and refine your strategy to ensure a bulletproof recovery plan. Some tips: : Use selective inclusion/exclusion to avoid unnecessary files, compress with LZ4 for faster recovery, and automate incremental backups to save storage. : Boot into a rescue environment, restore files via Bacula, and reinstall the bootloader to bring your system back to life in no time. Proactive disaster recovery preparation is key! #Linux #Bacula #Backup #SysAdmin #DisasterRecovery Skip to content How to install and configure Bacula is a common question for us. Basically Bacula is an on-linebased back up tool. Which is used to backup files from different servers into back up server where the bacula is running. For setup this backup tool across network first you have to install bacula server package on backup server machine where you are storing your backup contents ,and install bacula client daemon on all other servers from where we are going to backup data. Bacula has five main components.Director daemonThis daemon co-ordinate all working of backup,and through its configuration file we can specify all these things.File daemonThis daemon works in all clients from that client we are backup data. Director daemon connect to this daemon after authentication and backup the files from this client.Storage daemonThis daemon is for store the backup data from client in to hard disk of backup server,usually this daemon and director daemon works in the same backup server. director works as intermediate between the file daemon and storage daemon.Console daemonThis is a terminal to control all works.This console connect to director daemon and using its commands we can define all things related with backup .Catalog DatabaseThe database used here is for store all information related to the backup, including the file indexing.Commonly used database for bacula is Mysql. This figure shows how the different bacula daemon configuration files were linked together.How to install and configure Bacula ServerYou can install bacula from rpm packages or from Source compilation. Here we are focusing on the source method,which is tested and is working fine.* Download latest version of bacula from bacula.org site .Here we are using following versions[text]1. bacula-3.0.3.tar.gz (2. depkgs-18Feb09.tar.gz or later versions ([/text]This two packages are used to setup a bacula,In which you have to install depkgs-18Feb09.tar.gz first to solve remaining dependency problems before starting bacula-3.0.3.tar.gz. You should not hesitate to install depkgs-18Feb09.tar.gz ,it contains different packages ,in which you can install mtx and qwt. you need not install sqlite database because mysql is the default database.[bash]tar -xzf depkgs-18Feb09.tar.gzcd depkgsmake qwtmake mtxgmake mtx-instal[/bash]Then Enter in to the bacula source directory and Use the following configurations settings to install bacula (Or You can use system default configuration)[shell]CFLAGS=-g -O2 \./configure \sbindir=/usr/local/bacula/bin \sysconfdir=/usr/local/bacula/bin \with-pid-dir=/usr/local/bacula/bin/working \with-subsys-dir=/usr/local/bacula/bin/working \enable-smartalloc \with-mysql \with-working-dir=/usr/local/bacula/ \with-dump-email=user.name=@????.se \ #The mail addresses is to mail all activities of your backup in to your inbox.with-job-email=user.name@????.se \with-smtp-host=localhost \enable-bat \with-qwt=/usr/local/qwt-5.0.2/ #path to qwt source folder(usually it is inside depkg folder that you are installed previously)[/shell][shell]makemake installmake install-autostart #only supported for the officially supported systems (Redhat/Fedora).This will put all startup script into the /etc/init.d/ folder and corresponding syslinks , so automatically start corresponding daemon at startup.make distclean # type this to clear all configuration settings if you are starting ./configure from beginning.[/shell]Now you are successful completed the installation of bacula server , then typeThen we have to setup the Database to store the catalog information.Most commonly used database is Mysql,and setup the corresponding users,databases and privileges for the bacula application.[shell] /etc/init.d/mysqld start [/shell]Bacula installation has included some scripts to complete the initial database and other server setups, these scripts are under your bin folder of the installed directory.[shell]cd /bin./grant_mysql_privileges -u root -p[/shell]Create database[shell]./create_mysql_database -u root -p./make_mysql_tables -u root -p[/shell]create a directory called working under /usr/local/bacula/bin/Afrer installation of bacula. navigate to installed folder and run bacula by typing[shell]./bacula start[/shell]This will start all three daemons (bacula-dir,bacula-sd and bacula-fd) And then check ports where these daemons are listening.[text]default case:daemon | port==========bacula-dir 9101bacula-fd 9102bacula-sd 9103make sure that the above mentioned ports are added and opened in the csf.conf file of the server or in some other firewall settings[/text]After successful installation to start the sample backup from same system where you installed all three daemons . Follow this simple tutorial : administrate bacula it provide a console or terminal named as bconsole . Using this console we can do all work from back end.NB: For installation from source package, after detar you should read the README and INSTALL files. Most of the time this will helps you to complete installation.How to install and configure Bacula ClientAfter downloading the source and depkgs do the depkgs installation as mentioned aboveUse these following configuration to install client :[shell]CFLAGS=-g -O2 ./configure bindir=/usr/local/bacula/bin sysconfdir=/usr/local/bacula/bin with-pid-dir=/usr/local/bacula/bin/working with-subsys-dir=/usr/local/bacula/bin/working enable-smartalloc with-working-dir=/usr/local/bacula/   with-smtp-host=localhost with-qwt=../depkgs/qwt-5.0.2/(here path to qwt source) enable-client-only[/shell]If your system is 64-bit(To know it use the command arch) then add libdir=/usr/local/lib64[shell]makemake installmake install-autostart-fd //It helps start client daemon at start up.[/shell]create a directory called working under /usr/local/bacula/bin/start the file daemon using[shell]/etc/init.d/bacula-fd start[/shell]add a new clientand job in to the bacula-dir.confand set the password in the in the confs as shown in the above figure (Use above tutorial also)Use Follwing configuration checking if you have any problems with the bacula setup[text]a) Client bacula-fd daemon listening to 9102b) Edit bacula-fd.conf ,Change the Director name and password to Director name and client resource password in the bacula-dir.conffile of the Server.c) Add server hostname to the /etc/hosts of the client system, inorder to ensure correct resolution.d) Also check the ports 9102 to listen server request and 9103 to contact server storage daemon by typingtelnet server-hostname 9103 (from client)telnet client-hostname 9102 (from server)[/text]Above procedure is the standard installation steps ; You can download and use the documentation (*.gz) package from bacula.org for more details.SET UP WEB BASED INTERFACE TO MONITOR BACULA(php and perl based)(Install this package in your backup server where your bacula-server is installed)Bweb web based comprehensive admin toolBweb developed up on perl,so in order to install bweb we need to install some perl dependencies files.you can use cpan.You can install this tool just following the INSTALL file under bacula-gui-XXX/bweb/. This file is more than enough to complete the installation of bweb.Bacula-gui-3.0.3.tar.gzDownload this package to setup web interface .Detar this package and Read README to complete installtaion [in this package You need not type make or make install , just[shell]./configure with-bacula=(path to bacula source folder)[/shell]Then copy the bacula-web from this source folder and place it in your document root of the apache.NB: This gui was only tested with php 4.3.4 and php-5.0.4,later. you may get blank page while you are using later versions.check the error log and correct it (may be some permission error). If you have any problem to install php 4.3.4 with your latest apache 2.2.* then go for apache 2.0.* versions.Here we tested the following versions.1.Install pear DB by typing #pear install DB 2.apache 2.0.633.php-4.3.4After installation web-servercopy copy folder bacula-web to its document root , then type : :/bacula-webSome Error Fixes: useful in How to install and configure Bacula1.If your configuration of server and clients seems to be correct, but you still receiving this erroreg:: Fatal error: bsock.c:135 Unable to connect to Client: server.client.com-fd on server.client.com:9102. ERR=Interrupted system call * Please check the firewall configurations,whether ports 9102 not blocked at client server and 9101or 9102 are not blocked at server .* To check this telnet to destination port. If the system is installed with csf ,then check the TCP IN and OUT allowed ports. Share copy and redistribute the material in any medium or format for any purpose, even commercially. Adapt remix, transform, and build upon the material for any purpose, even commercially. The licensor cannot revoke these freedoms as long as you follow the license terms. Attribution You must give appropriate credit , provide a link to the license, and indicate if changes were made . You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. ShareAlike If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original. No additional restrictions You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits. You do not have to comply with the license for elements of the material in the public domain or where your use is permitted by an applicable exception or limitation . No warranties are given. The license may not give you all of the permissions necessary for your intended use. For example, other rights such as publicity, privacy, or moral rights may limit how you use the material. Bacula Client is a source from where backups are done and it is the destinationfor restoring where backups are restored.This documentation section will help you to create a new Bacula Client and useit with Bacula and Bacularis.The Bacula Linux client can be installed in different ways. Here we describedthe easy way with deploying Bacula Client directly using the Bacularis and Baculadeployment function.If you prefer to install Bacula Client manually and then setup it to use by theBacula Director and Storage Daemon, this is fine as well. In this case you canskip this documentation section.Bacularis version 1.2.0 or greater.Bacularis package repository access.Remote host that with the Linux distribution that supports the Bacularis and Baculadeployment (see: OS profiles)SSH access to the remote host on the installation time only If to get access to your Bacularis package repository you use the authenticationcredentials, please prepare the credentials because they will be needed duringthe deployment.This Bacula Client installation process consists of two steps:installing Bacularis API using the SSH protocol (this is one time operation)installing Bacula Client using the HTTP(S) protocolBy default to install Bacularis API is used the Bacularis package repository.By default to install Bacula Client is used the operating system package repository.Both using the Bacularis and Bacula package repositories can be customized andthere can be used other package repositories (ex: Bacula.org repositories). This can beachieved by customizing the OS profiles. You can create new OS profiles, inherit existingones and adapt them to your operating systems. In the Bacularis web interface please go to the Deployment page available in themain menu.On the Repo auths tab please add the repository credentials (a new repo auth) if youuse them. Please also set the Default option in the new repo auth window if they arethe only cerdentials to repositories that you have.Please come back to the Hosts tab and click the Deploy API host button.In the opened Deploy API host window please fill the address field. This is theremote host address where the Bacularis API and the Bacula Client will be installed.In the OS profile field you need to select the operating system that you useon the remote destination host.Please fill the admin username and password fields that are the SSH access credentials.Run the connection test button. If everything is fine, then in the Save as name fieldyou can define the new API host name that will be used in Bacularis, for example:My Ubuntu host or Backup client 321. If the Bacularis API deployment finished successfully, on the Deployment pagein the API host table you will be able to see this newly added Bacularis API host.In the table row with the new API client, please click the Install button.In the opened window on the combobox list, please check the Client checkboxand click the Install button.After successful finishing the installation, the Bacula Client is installed, configuredand added to the Bacula Director. On some operating systems, specially on the DEB-based Linux distributions by default thenewly installed Bacula Client listens on the localhost netework interface only (127.0.0.1).To use this Bacula Client to back up and restore you need to make this client workingon all interfaces or on the network interface available from outside. To do it, you canremove the FdAddress = 127.0.0.1 directive from the Bacula Client configuration onthe remote host in bacula-fd.conf file. You can see it in the video guide below how todo it directly on the Bacularis web interface. After that to apply this new changethe Bacula Client restart is needed. Here you can watch the video guide that shows deploying Bacula Client with the Bacularis: The bacula windows client setup and installation steps are: First, for correct installation, the user must be logged in to the local computer as an administrator for correct installation. Logging in as a domain administrator on the local machine creates errors in permissions when running bacula. Click on the NSIS installation icon. Once launched, the installation wizard will prompt if you want to install bacula. Next, you will be asked to choose the type of installation. Proceeding means you will be asked to select the different components to be installed, either bacula client program or documentation. First time installation means, you will be prompted to enter basic information about configuration. You will click next until the process is compete. Learn More Configuration of the bacula windows client setup Bacula windows client setup would be easier if it was possible to directly install it, then run it to automatically launch and have it work, but that is not the case. Configuration files should be changed in the server and client. The four configuration files on the client in the directory installed by default in C:\program files\bacula are: \bconsole.conf \bin32\tray-monitor.conf \bacula-fd.conf \bin32\bat.conf (windows console) BAT Console of the bacula windows client setup: The bat.conf console offers the user a local windows interface to connect to the bacula server and view the status for different jobs. If you are not going to use the windows Bat console, it means this directive will not be configured. An example of the BAT console: # # Bacula Administration Tool (bat) Configuration File # Director { Name = -dir #Name of your Director. THis is normally the Bacula Server Name with "-dir" appended to it DIRport = 9101 #Port set in the bacula-dir.conf on the Bacula Server. This is normally 9101 address = #FQDN or IP of the bacula server Password = "Mjmmn_jens0-734NHjnebH_je_" #DIRPASSWD identified at the top of this page } Tray Monitor and tray-monitor.conf of the bacula windows client setup: This tool runs on windows computers and is found in the windows bacula client installation. It gives the user the chance to monitor what is happening in the bacula environment. Example # Client1 Client { Name = -fd #File Daemon client name. it is usually the computer name with "-fd" added to the end Address = FDPort = 9102 # Port set for the FileDaemon in bacula-fd.conf on the client. normally 9102 Password = "BUJu87_88jg7_KgTh__KH" # password for FileDaemon (FDMPASSWD from top of page)} Bconsole & bconsole.conf (bacula windows client setup): This is the bacula command line console that is also configured with bacula-dir.conf Director { Name = -dir #normally the Bacula Server name with "-dir" added at the end DIRport = 9101 #Port set in the bacula-dir.conf on the Bacula Server. Normally 9101 address =Password = "Mjmmn_jens0-734NHjnebH_je_" #DIRPASSWD described at the top.} Bacula File Daemon & bacula-fd.conf (bacula windows client setup): The bacula file daemon offers communication between the storage daemon and the director to back up the files on your client. Bacula windows client setup Server Configurations There are programs that ease the setting up of the server to communicate with clients and file backups. Web-based programs like Webmin have interfaces for system administration that ease the setup of the server to communicate with the clients and file backups. The Client Resource for bacula windows client setup The file daemon or client resource shows all names of clients used by the director and ports used for director connections.The client resource includes: file daemon, name, directory, time interval, IP address specifications and port number. Conclusion Bacula windows client setup is simple because of the batch scripts. The setup can be done by running it, and hitting next through the defaults until the setup is complete. Bacula will start afterwards and the final step is copying all configuration files on the client in the directory installed or the C:/program files/bacula/ folder. Restarting bacula client service will launch the program automatically. Bacula Windows Client Configuration Bacula Backup System Bacula Backup Solution bsysdoc When each of the Bacula programs starts, it reads a configurationfile specified on the command line or the default bacula-dir.conf,bacula-fd.conf, bacula-sd.conf, or console.conf for theDirector, the File Daemon, the Storage Daemon, and the Consoleprogram respectively.Each service (Director, Client, Storage, Console) has its ownconfiguration file containing a set of Resource definitions. Theseresources are very similar from one service to another, but may containdifferent directives (records) depending on the service. For example, inthe Directors resource file, the Director resource defines the name of theDirector, a number of global Director parameters and his password. Inthe File Daemon configuration file, the Director resource specifies whichDirectors are permitted to use the File Daemon.Before running Bacula for the first time, you must customize theconfiguration files for each daemon. Default configuration files willhave been created by the installation process, but you will need tomodify them to correspond to your system. The details of each Resource and the directives permitted therein aredescribed in the following chapters.The following configuration files must be defined:Console to define the resources for the Console program (user interface to the Director). It defines which Directors are available so that you may interact with them.Director to define the resources necessary for the Director. You define all the Clients and Storage daemons that you use in this configuration file.File Daemon to define the resources for each client to be backed up. That is, you will have a separate Client resource file on each machine that runs a File daemon.Storage to define the resources to be used by each Storage daemon. Normally, you will have a single Storage daemon that controls your tape drive or tape drives. However, if you have tape drives on several machines, you will have at least one Storage daemon per machine. Read more: Go back to: Bacula Enterprise Configuration. Copyright 2025, Bacula Systems. Built with Sphinx using a theme provided by Read the Docs. ,the free encyclopedia that anyone can edit.117,937 active editors 7,000,889 articles in EnglishAndrea Navagero (14831529) was a Venetian diplomat and writer. He entered the Great Council of Venice at the age of twenty, five years younger than was normal at the time. He edited manuscripts at the Aldine Press, garnering a reputation as a scholar and a highly skilled writer. In 1515, he was appointed the official historian of the Republic of Venice as well as the caretaker of a library containing the collection of the scholar Bessarion. Navagero was named the Venetian ambassador to Spain in 1523 and navigated the volatile diplomatic climate caused by the conflict between CharlesV of Spain and FrancisI of France. By the time Navagero arrived back in Venice in 1528, he had grown disillusioned with politics and wished to return to editing manuscripts and cultivating his prized gardens. Much to his dismay, he was appointed ambassador to France in January 1529. After traveling to meet with FrancisI, he fell ill and died that May. (Fullarticle...)Recently featured: Nosy KombaMcDonnell Douglas Phantom in UK serviceTransportation during the 2024 Summer Olympics and ParalympicsArchiveBy emailMore featured articlesAboutEngraving of the Great Pyramid of Giza... that the 1572 Eight Wonders of the World (engraving pictured) is the source of the modern list of classical Seven Wonders of the World?... that Hedwig Tam gained 20 pounds to play a postpartum mother in Montages of a Modern Motherhood?... that the Alfonsine Ordinances punished Jews and Muslims with enslavement if they disguised their identity with the intention of "sinning with Christian women"?... that even though he had never seen a field hockey game, Willy Miranda became a high school coach and went on to win over 450 games across a 42-year tenure?... that a false viral rumour claimed 42 people committed suicide after their homoerotic fan art was included in the film Crazy About One Direction?... that an Arizona TV station put a satellite dish in a vacant swimming pool?... that 42 years after Jilly Cooper's How to Stay Married was first published, she described it as "terribly politically incorrect"?... that wrestler Kurt Howell won all 108 of his matches in high school?... that the second-place candidate in the 2018 Taipei mayoral election lost by just 0.23%, demanded a recount, and ended up losing by even more?ArchiveStart a new articleNominate an articlenosato DaikiIn sumo, nosato Daiki (pictured) is promoted to yokozuna.In association football, Liverpool win the Premier League title.In motor racing, lex Palou wins the Indianapolis 500.In basketball, the EuroLeague concludes with Fenerbahe winning the Final Four Playoff.Ongoing: Gaza warM23 campaignRussian invasion of UkrainetimelineSudanese civil wartimelineRecent deaths: Phil RobertsonMary K. GaillardPeter DavidAlan YentobGerry ConnollySebastio SalgadoNominate an articleMay 29: Feast day of Saint PaulVI (Catholicism)Headline in the New York Times1233 MongolJin War: The Mongols entered and began looting Kaifeng, the capital of the Jin dynasty of China, after a 13-month siege.1416 A squadron of the Venetian navy captured many Ottoman ships at the Battle of Gallipoli, confirming Venetian naval superiority in the Aegean Sea for the next few decades.1913 During the premiere of the ballet Le Sacre du printemps by Igor Stravinsky at the Thtre des Champs-lyses in Paris, the avant-garde nature of the music and choreography caused a near-riot in the audience (report pictured).1999 Charlotte Perrelli, representing Sweden, won the Eurovision Song Contest, the first edition not to feature an orchestra or live accompaniment.2011 Residents of Portland, Oregon, held a rally called Hands Across Hawthorne in response to an attack against a gay couple holding hands while crossing the Hawthorne Bridge.Benedetto Pistrucci (b.1783)G.K. Chesterton (b.1874)Hubert Opperman (b.1904)Uro Drenovi (d.1944)More anniversaries: May 28May 29May 30ArchiveBy emailList of days of the yearAboutThe Australian white ibis (Threskiornis molucca) is a wading bird of the ibis family, Threskiornithidae. It is widespread across much of Australia, and has a predominantly white plumage with a bare, black head, long downcurved bill, and black legs. While it is closely related to the African sacred ibis, the Australian white ibis is a native Australian bird. Due to its increasing presence in the urban environment and its habit of rummaging in garbage, the species has acquired a variety of colloquial names such as "tip turkey" and "bin chicken". This Australian white ibis was photographed at the Royal Botanic Garden, Sydney.Photograph credit: Charles J. SharpRecently featured: Hell Gate BridgeAnemonoides blandaBluespotted ribbontail rayArchiveMore featured picturesCommunity portal The central hub for editors, with resources, links, tasks, and announcements.Village pump Forum for discussions about Wikipedia itself, including policies and technical issues.Site news Sources of news about Wikipedia and the broader Wikimedia movement.Teahouse Ask basic questions about using or editing Wikipedia.Help desk Ask questions about using or editing Wikipedia.Reference desk Ask research questions about encyclopedic topics.Content portals A unique way to navigate the encyclopedia.Wikipedia is written by volunteer editors and hosted by the Wikimedia Foundation, a non-profit organization that also hosts a range of other volunteer projects: CommonsFree media repository MediaWikiWiki software development Meta-WikiWikimedia project coordination WikibooksFree textbooks and manuals WikidataFree knowledge base WikinewsFree-content news WikiquoteCollection of quotations WikisourceFree-content library WikispeciesDirectory of species WikiversityFree learning tools WikivoyageFree travel guide WiktionaryDictionary and thesaurusThis Wikipedia is written in English. Many other Wikipedias are available; some of the largest are listed below. 1,000,000+ articles DeutschEspaolFranaisItalianoNederlandsPolskiPortugusSvenskaTing Vit 250,000+ articles Bahasa IndonesiaBahasa MelayuBn-lm-gCataletinaDanskEestiEsperantoEuskaraMagyarNorsk bokmlRomnSimple EnglishSloveninaSrpskiSrpskohrvatskiSuomiTrkeOzbekcha 50,000+ articles AsturianuAzrbaycancaBosanskiFryskGaeilgeGalegoHrvatskiKurdLatvieuLietuviNorsk nynorskShqipSlovenina Retrieved from " 2Calendar yearYearsMillennium2ndmillenniumCenturies12thcentury13thcentury 14thcenturyDecades1210s1220s1230s 1240s1250sYears1230123112321233 123412351236vte1233 by topicLeadersPolitical entitiesState leadersReligious leadersBirth and death categoriesBirths DeathsEstablishments and disestablishments categoriesEstablishments DisestablishmentsArt and literature1233 in poetryvte1233 in various calendarsGregorian calendar1233MCCXXXIIIAb urbe condita1986Armenian calendar682 Assyrian calendar5983Balinese saka calendar11541155Bengali calendar639640Berber calendar2183English Regnal year17Hen.318Hen.3Buddhist calendar1777Burmese calendar595Byzantine calendar67416742Chinese calendar (WaterDragon)3930 or 3723to (WaterSnake)3931 or 3724Coptic calendar949950Discordian calendar2399Ethiopian calendar12251226Hebrew calendar49934994Hindu calendars- Vikram Samvat12891290- Shaka Samvat11541155- Kali Yuga43334334Holocene calendar11233Igbo calendar233234Iranian calendar611612Islamic calendar630631Japanese calendarJei 2 / Tenpuku 1()Javanese calendar11421143Julian calendar1233MCCXXXIIIKorean calendar3566Minguo calendar679 before ROC679Nanakshahi calendar235Thai solar calendar17751776Tibetan calendar(male Water-Dragon)1359 or 978 or 206to(female Water-Snake)1360 or 979 or 207 Henry I of Cyprus receives a messageYear 1233 (MCCXXXIII) was a common year starting on Saturday of the Julian calendar.War of the Lombards: Lombard forces at Kyrenia surrender to John of Beirut, after a 10-month siege. The defenders, with their personal belongings, are allowed to retire to Tyre. Captured prisoners are exchanged for those held by Richard Filangieri, commander of the Lombards, at Tyre. Cyprus is wholly restored under the rule of the 16-year-old King Henry I ("the Fat"). His vassals are rewarded, and loans that they have made are repaid.[1]August 20 Oath of Bereg: King Andrew II of Hungary vows to the Holy See that he will not employ Jews and Muslims to administer royal revenues, which causes diplomatic complaints and ecclesiastical censures.[2]Winter Reconquista: King Ferdinand III of Castile ("the Saint") conquers the cities of Trujillo and beda. The Castilian army besieges the city of Peniscola. Ferdinand forces Ibn Hud, ruler of the Taifa of Zaragoza, to sign a truce.[3]August Richard Marshal, 3rd Earl of Pembroke, signs an alliance with Llywelyn the Great, to join forces to revolt against King Henry III. Richard is faced by demands from royal bailiffs in September where the garrison of Usk Castle is forced to surrender.November Henry III's army camped at Grosmont Castle is attacked in the night, by a force of Welsh and English rebels. Several of Henry's supporters are captured, and the castle is returned to Hubert de Burgh, one of the rebels.May 29 MongolJin War: The Mongol army led by gedei Khan captures Kaifeng, capital of the Jin dynasty ('Great Jin'), after the 13-month Siege of Kaifeng (1232). The Mongols plunder the city, while Emperor Aizong of Jin flees for the town of Caizhou. Meanwhile, gedei departs and leaves the final conquest to his favoured general, Subutai.December Siege of Caizhou: The Mongols under gedei Khan besiege Caizhou and ally themselves with the Chinese Song dynasty to eliminate the Jin Dynasty.Gendt receives its city rights from Otto II ("the Lame"), count of Guelders (modern Netherlands).Pope Gregory IX establishes the Papal Inquisition, to regularize the persecution of heresy.June/July Ibn Manzur, Arab lexicographer and writer (d. 1312)August 15 Philip Benizi de Damiani, Italian religious leader (d. 1285)October Al-Nawawi, Syrian scholar, jurist and writer (d. 1277)Adelaide of Burgundy, duchess of Brabant (d. 1273)Choe Ui, Korean military leader and dictator (d. 1258)Ibn al-Quff, Ayyubid physician and surgeon (d. 1286)Sancho of Castile, archbishop of Toledo (d. 1261)January 6 Matilda of Chester, Countess of Huntingdon (or Maud), English noblewoman (b. 1171)January 18 Yang (or Gongsheng), Chinese empress (b. 1162)February 12 Ermengarde de Beaumont, queen of ScotlandMarch 1 Thomas I (or Tommaso), count of Savoy (b. 1178)May Simon of Joinville, French nobleman and knight (b. 1175)June Yolanda de Courtenay, queen consort of HungaryJuly 8 Konoe Motomichi, Japanese nobleman (b. 1160)July 26 Wilbrand of Oldenburg, prince-bishop of UtrechtJuly 27 Ferdinand (or Ferrand), count of Flanders (b. 1188)July 29 Savari de Maulon, French nobleman (b. 1181)July 30 Konrad von Marburg, German priest (b. 1180)October 8 Ugo Canefri, Italian health worker (b. 1148)October 22 Fujiwara no Shunshi, Japanese empress consort (b. 1209)November 22 Helena, duchess of Brunswick-LneburgNovember 27 Shi Miyuan, Chinese politician (b. 1164)Ibn al-Athir, Seljuk historian and biographer (b. 1160)Bertran de Born lo Filhs, French troubadour (b. 1179)Bohemond IV ("the One-Eyed"), prince of Antioch (b. 1175)Gkbri ("Blue-Wolf"), Ayyubid general and ruler (b. 1154)Guilln Prez de Guzmn, Spanish nobleman (b. 1180)John Apokaukos, Byzantine bishop and theologianMathilde of Angoulme, French noblewoman (b. 1181)Sayf al-Din al-Amidi, Ayyubid scholar and jurist (b. 1156)William Comyn, Scoto-Norman nobleman (b. 1163)^ Steven Runciman (1952). A History of The Crusades. Vol III: The Kingdom of Acre, pp. 169170. ISBN978-0-241-29877-0.^ Berend, Nora (2001). At the Gate of Christendom: Jews, Muslims and "Pagans" in Medieval Hungary, c. 1000-c.1300. Cambridge University Press. p.158. ISBN978-0-521-02720-5.^ Lourie, Elena (2004). Jews, Muslims, and Christians in and around the Crown of Aragon: essays in honour of Professor Elena Lourie. Brill. p.270. ISBN90-04-12951-0.[permanent dead link]Retrieved from " 3One hundred years, from 1101 to 1200See also: Renaissance of the 12th centuryMillennia2ndmillenniumCenturies11thcentury12thcentury13thcenturyTimelines11thcentury12thcentury13thcenturyState leaders11thcentury12thcentury13thcenturyDecades1100s1110s1120s1130s1140s1150s1160s1170s1180s1190sCategories:Births Deaths Establishments DisestablishmentsvteEastern Hemisphere at the beginning of the 12th centuryThe 12th century is the period from 1101 to 1200 in accordance with the Julian calendar. In the history of European culture, this period is considered part of the High Middle Ages and overlaps with what is often called the "'Golden Age' of the Cistercians". The Golden Age of Islam experienced significant development, particularly in Islamic Spain.In Song dynasty China, an invasion by Jurchens caused a political schism of north and south. The Khmer Empire of Cambodia flourished during this century, while the Fatimids of Egypt were overtaken by the Ayyubid dynasty. Following the expansions of the Ghaznavids and Ghurid Empire, the Muslim conquests in the Indian subcontinent took place at the end of the century.The Ghurid Empire converted to Islam from Buddhism.1101: In July, the Treaty of Alton is signed between Henry I of England and his older brother Robert, Duke of Normandy in which Robert agrees to recognize Henry as king of England in exchange for a yearly stipend and other concessions. The agreement temporarily ends a crisis in the succession of the Anglo-Norman kings.11011103: David the Builder takes over Kakheti and Hereti (now parts of Georgia).1102: King Coloman unites

acknowledgment of the pope's sovereignty over the Papal States and Alexander acknowledging the emperor's overlordship of the imperial Church.1176: On September 17, The Battle of Myriokephalon (Myriocephalum; Turkish: Miryakefalon Sava) is fought between the Byzantine Empire and the Seljuk Turks in Phrygia. It is a serious reversal for the Byzantine forces and will be the final, unsuccessful, effort by the Byzantines to recover the interior of Anatolia from the Seljuk Turks.1177: The Treaty or Peace of Venice is signed by the papacy and its allies, and Frederick I, Holy Roman Emperor. The Norman Kingdom of Sicily also participates in negotiations and the treaty thereby determines the political course of all of Italy for the next several years.1178: Chinese writer Zhou Qufei, a Guangzhou customs officer, writes of an island far west in the Indian Ocean (possibly Madagascar), from where people with skin "as black as lacquer" and with frizzy hair were captured and purchased as slaves by Arab merchants.1179: The Treaty of Cazola (Cazorla) is signed by Alfonso II of Aragon and Alfonso VIII of Castile, dividing Andalusia into separate zones of conquest for the two kingdoms, so that the work of the Reconquista would not be stymied by internecine feuding.1180: The Portuguese Navy defeats a Muslim fleet off the coast of Cape Espichel.11801185: the Genpei War in Japan.1181: Parakramabahu the Great conducts a large-scale raid on Burma, after a ship transporting a Sinhalese princess to the Khmer Empire is attacked by Burmese naval fleets.1182: Religious reformations of Theravada Buddhism in Pagan Burma under the patronage of Narapatisithu are continued with the end of the Polonnaruwa-Pagan War.1182: Revolt of the people of Constantinople against the Latins, whom they massacre, proclaiming Andronicus I Comnenus as co-emperor.1183: On January 25, the final Peace of Constance between Frederick Barbarossa, the pope and the Lombard towns is signed, confirming the Peace of Venice of 1177.1183: On September 24, Andronicus I Comnenus has his nephew Alexius II Comnenus strangled.1184: On March 24, Queen Tamar, King of Georgia, accedes to the throne as sole ruler after reigning with her father, George III, for six years.1184: Diet of Pentecost organised by Emperor Frederick I in Mainz.1185: The Uprising of Asen and Peter against the Byzantine Empire leads to the restoration of the Bulgarian Empire.1185: Andronicus I Comnenus is deposed and, on September 12, executed as a result of the Norman massacre of the Greeks of Thessalonika.1185: the cathedral school (Katedralskolan) in Lund, Sweden, is founded. The school is the oldest in northern Europe and one of the oldest in all of Europe.1185: Beginning in this year the Kamakura shogunate deprives the emperor of Japan of political power.1186: On January 27, the future Holy Roman Emperor Henry VI marries Constance of Sicily, the heiress to the Sicilian throne.1187: On July 4, in the Battle of Hattin, Saladin defeats the king of Jerusalem.1187: In August, the Swedish royal and commercial center Sigtuna is attacked by raiders from Karelia, Couronia, and/or Estonia.[3]1188: The Riah were introduced into the Habt and south of Tetouan by the Almohad caliph, Abu Yusuf Yaqub al-Mansur, and Jochem and Acem were introduced in Tamesna.[4]1189: On September 3, Richard I is crowned King of England at Westminster.1189: On November 11, William II of Sicily dies and is succeeded by his illegitimate cousin Tancred, Count of Lecce instead of Constance.11891192: The Third Crusade is an attempt by European leaders to wrest the Holy Land from Saladin.Richard I of England, or Richard the Lionheart.1190: On June 10, Emperor Frederick Barbarossa drowns in the River Salef, leaving the Crusader army under the command of the rivals Philip II of France and Richard I of England, which ultimately leads to the dissolution of the army.1191: Holy Roman Emperor Henry VI attacked the Kingdom of Sicily from May to August but fails and withdrawn, with Empress Constance captured (released 1192).1191: On September 7, Saladin is defeated by Richard I of England at the Battle of Arsuf.1192: In April, Isabella I begins her reign as Christian Queen of the Kingdom of Jerusalem1192: In the Battle of Jaffa, King Richard the Lionheart defeats Saladin.1192: In June, the Treaty of Ramla is signed by Saladin and Richard Lionheart. Under the terms of the agreement, Jerusalem will remain under Muslim control. However, the city will be open to Christian pilgrims. The Latin Kingdom is reduced to a coastal strip that extends from Tyre to Jaffa.1192: Minamoto no Yoritomo is appointed Sei-i Taishgun, "barbarian-subduing great general", shgun for short, the first military dictator to bear this title.1192: Sultan Shahbuddin Muhammad Ghori establishes the first Muslim empire in India for 14 years (11921206) by defeating Prithviraj Chauhan.1193: Nalanda, the great Indian Buddhist educational centre, is destroyed.1194: Emperor Henry VI conquers the Kingdom of Sicily.1195: On June 16, the struggle of Shamqori. Georgian forces annihilate the army of Abu Baqar.1198: The brethren of the Crusader hospital in Acre are raised to a military order of knights, the Teutonic Knights, formally known as the Order of the Knights of the Hospital of St. Mary of the Teutons in Jerusalem.1199: Pope Innocent III writes to Kaloyan, inviting him to unite the Bulgarian Church with the Roman Catholic Church.1200: Construction begins on the Grand Village of the Natchez near Natchez, Mississippi. This ceremonial center for the Natchez people is occupied and built until the early 17th century.[5]Eastern Hemisphere at the end of the 12th centuryChina is under the Northern Song dynasty. Early in the century, Zhang Zeduan paints Along the River During the Qingming Festival. It will later end up in the Palace Museum, Beijing.In southeast Asia, there is conflict between the Khmer Empire and the Champa. Angkor Wat is built under the Hindu king Suryavarman II. By the end of the century, the Buddhist Jayavarman VII becomes the ruler.Japan is in its Heian period. The Chj-jinbutsu-giga is made and attributed to Toba Sj. It ends up at the Kzan-ji, Kyoto.In Oceania, the Tui Tonga Empire expands to a much greater area.Europe undergoes the Renaissance of the 12th century. The blast furnace for the smelting of cast iron is imported from China, appearing around Lapphyttan, Sweden, as early as 1150.Alexander Neckam is the first European to document the mariner's compass, first documented by Shen Kuo during the previous century.Christian humanism becomes a self-conscious philosophical tendency in Europe. Christianity is also introduced to Estonia, Finland, and Karelia.The first medieval universities are founded. Pierre Abelard teaches.Middle English begins to develop, and literacy begins to spread outside the Church throughout Europe.[6] In addition, churchmen are increasingly willing to take on secular roles. By the end of the century, at least a third of England's bishops also act as royal judges in secular matters.[7]The Ars antiqua period in the history of the medieval music of Western Europe begins.The earliest recorded miracle play is performed in Dunstable, England.Gothic architecture and trouvre music begin in France.During the middle of the century, the Cappella Palatina is built in Palermo, Sicily, and the Madrid Skylitzes manuscript illustrates the Synopsis of Histories by John Skylitzes.Fire and plague insurance first become available in Iceland, and the first documented outbreaks of influenza there happens.The medieval state of Serbia is formed by Stefan Nemanja and then continued by the Nemanji dynasty.By the end of the century, both the Capetian dynasty and the House of Anjou are relying primarily on mercenaries in their militaries. Paid soldiers are available year-round, unlike knights who expected certain periods off to maintain their manor lifestyles.[8]In India, Hoysala architecture reaches its peak.In the Middle East, the icon of Theotokos of Vladimir is painted probably in Constantinople. Everything but the faces will later be retouched, and the icon will go to the Tretyakov Gallery of Moscow.The Georgian poet Shota Rustaveli composes his epic poem The Knight in the Panther's Skin.Shahab al-Din Suhrawardi founds his "school of illumination".In North Africa, the kasbah of Marrakesh is built, including the city gate Bab Agnaou and the Koutoubia mosque.In sub-Saharan Africa, Kente cloth is first woven.In France, the first piedfort coins were minted.The city of Tula burns down, marking the end of the Toltec EmpireIn West Africa the Ife Empire is established.See also: Timeline of historic inventions 12th century1104: The Venice Arsenal of Venice, Italy, is founded. It employed some 16,000 people for the mass production of sailing ships in large assembly lines, hundreds of years before the Industrial Revolution.1106: Finished building of Gelati.1107: The Chinese engineer Wu Deren combines the mechanical compass vehicle of the south-pointing chariot with the distance-measuring odometer device.1111: The Chinese Donglin Academy is founded.1165: The Liuhe Pagoda of Hangzhou, China, is built.1170: The Roman Catholic notion of Purgatory is defined.[9]1185: First record of windmills.Wikimedia Commons has media related to 12th century.^ Soekmono, R, Drs., Pengantar Sejarah Kebudayaan Indonesia 2, 2nd ed. Penerbit Kanisius, Yogyakarta, 1973, 5th reprint edition in 1988 p.57^ Britannica, T. Editors of Encyclopaedia (1998, July 20). Kairi. Encyclopedia Britannica.^ Enn Tarvel (2007). Sigtuna hukkumine. Archived 2017-10-11 at the Wayback Machine Haridus, 2007 (7-8), p 3841^ Notice sur les Arabes hilaliens. Ismal Hamet. p.248.^ Francine Weiss and Mark R. Barnes (May 3, 1989). "National Register of Historic Places Registration: Grand Village of the Natchez Site / Fatherland Plantation Site (22-Ad-501)" (pdf). National Park Service. and Accompanying 3 photos, from 1989. (680KB)^ Warren 1961, p.129.^ Warren 1961, p.159.^ Warren 1961, p.60-61.^ Le Goff, Jacques (1986). The Birth of Purgatory. Chicago: University of Chicago Press. ISBN0226470822.Warren, Wilfred Lewis (1961). King John. University of California Press. p.362. ISBN9780520036437. {{cite book}}: ISBN / Date incompatibility (help)Retrieved from " 4The following pages link to 12th century External tools(link counttransclusion countsorted list) See help page for transcluding these entriesShowing 50 items.View (previous 50 | next 50) (20 | 50 | 100 | 250 | 500)Antisemitism in Christianity (links | edit)Catharism (links | edit)List of decades, centuries, and millennia (links | edit)Dialect (links | edit)House of Habsburg (links | edit)House of Hohenzollern (links | edit)History of Mali (links | edit)Maimonides (links | edit)Passport (links | edit)Sumba (links | edit)Taoism (links | edit)Weregild (links | edit)Zanzibar (links | edit)20th century (links | edit)1040 (links | edit)15th century (links | edit)16th century (links | edit)17th century (links | edit)18th century (links | edit)14th century (links | edit)1st century (links | edit)13th century (links | edit)4th century (links | edit)11th century (links | edit)1282 (links | edit)7th century (links | edit)10th century (links | edit)9th century (links | edit)8th century (links | edit)6th century (links | edit)5th century (links | edit)3rd century (links | edit)2nd century (links | edit)4th century BC (links | edit)1st century BC (links | edit)2nd century BC (links | edit)3rd century BC (links | edit)5th century BC (links | edit)6th century BC (links | edit)21st century BC (links | edit)11th century BC (links | edit)1000s (decade) (links | edit)1040s (links | edit)1299 (links | edit)1154 (links | edit)1163 (links | edit)1160s (links | edit)1141 (links | edit)1135 (links | edit)1204 (links | edit)View (previous 50 | next 50) (20 | 50 | 100 | 250 | 500)Retrieved from " WhatLinksHere/12th_century" The Client (or File Daemon) Configuration is one of the simpler ones to specify. Generally, other than changing the Client name so that error messages are easily identified, you will not need to modify the default Client configuration file. For a general discussion of configuration file and resources including the data types recognized by Bacula, please see the Configuration chapter of this manual. The following Client Resource definitions must be defined: Client - to define what Clients are to be backed up. Director - to define the Director's name and its access password. Messages - to define where error and information messages are to be sent. The Client Resource The Client Resource (or FileDaemon) resource defines the name of the Client (as used by the Director) as well as the port on which the Client listens for Director connections. Client (or FileDaemon) Start of the Client records. There must be one and only one Client resource in the configuration file, since it defines the properties of the current client program. Name = The client name that must be used by the Director when connecting. Generally, it is a good idea to use a name related to the machine so that error messages can be easily identified if you have multiple Clients. This directive is required. Working Directory = This directive is mandatory and specifies a directory in which the File daemon may put its status files. This directory should be used only by Bacula, but may be shared by other Bacula daemons provided the daemon names on the Name definition are unique for each daemon. This directive is required. On Win32 systems, in some circumstances you may need to specify a drive letter in the specified working directory path. Also, please be sure that this directory is writable by the SYSTEM user otherwise restores may fail (the bootstrap file that is transferred to the File daemon from the Director is temporarily put in this directory before being passed to the Storage daemon). Pid Directory = This directive is mandatory and specifies a directory in which the File daemon may put its process Id file files. The process Id file is used to shutdown Bacula and to prevent multiple copies of Bacula from running simultaneously. This record is required. Standard shell expansion of the is done when the configuration file is read so that values such as $HOME will be properly expanded. Typically on Linux systems, you will set this to: /var/run. If you are not installing Bacula in the system directories, you can use the Working Directory as defined above. Dedup Index Directory = This directive is deprecated and replaced by Client Rehydration. This directive is optional and specifies a directory in which the File Daemon may put a index cache of all blocks read during a Backup job. Standard shell expansion of the is done when the configuration file is read so that values such as $HOME will be properly expanded. ClientRehydration = This directive is optional and allows to try to do rehydration using existing local data on the Client at restore time. In some cases, the use of this directive permits to transfer less data over the network during a restore. The default value is no. Heartbeat Interval = This record defines an interval of time in seconds. For each heartbeat that the File daemon receives from the Storage daemon, it will forward it to the Director. In addition, if no heartbeat has been received from the Storage daemon and thus forwarded the File daemon will send a heartbeat signal to the Director and to the Storage daemon to keep the channels active. The default interval is 300s. This feature is particularly useful if you have a router such as 3Com that does not follow Internet standards and times out a valid connection after a short duration despite the fact that keepalive is set. This usually results in a broken pipe error message. If you continue getting broken pipe error messages despite using the Heartbeat Interval, and you are using Windows, you should consider upgrading your ethernet driver. This is a known problem with NVidia NForce 3 drivers (4.4.2 17/05/2004), or try the following workaround suggested by Thomas Simmons for Win32 machines: Browse to: Start Control Panel Network Connections Right click the connection for the nvidia adapter and select properties. Under the General tab, click Configure.... Under the Advanced tab set Checksum Offload to disabled and click OK to save the change. Lack of communications, or communications that get interrupted can also be caused by Linux firewalls where you have a rule that throttles connections or traffic. Maximum Concurrent Jobs = where is the maximum number of Jobs that should run concurrently. The default is set to 20, but you may set it to a larger number. Each contact from the Director (e.g. status request, job start request) is considered as a Job, so if you want to be able to do a status request in the console at the same time as a Job is running, you will need to set this value greater than 1. If set to a large value, please be careful to have this value higher than the Maximum Concurrent Jobs configured in the Client resource in the Director configuration file. Otherwise, backup jobs can fail due to the Director connection to FD be refused because Maximum Concurrent Jobs was exceeded on FD side. Maximum Job Error Count = where is the error threshold for the Job, after reaching it Job will be failed. The default value is 1000. If this value is set to 0, job will continue to run no matter how many errors it encounters. FDAddresses = Specify the ports and addresses on which the File daemon listens for Director connections. Probably the simplest way to explain is to show an example: FDAddresses = { ip = { addr = 1.2.3.4; port = 1205; } ipv4 = { addr = 1.2.3.4; port = http; } ipv6 = { addr = 1.2.3.4; port = 1205; } ip = { addr = 1.2.3.4 port = 1205 } ip = { addr = 1.2.3.4 } ip = { addr = 201:220:222::2 } ip = { addr = bluedot.thun.net } } where ip, ip4, ip6, addr, and port are all keywords. Note, that the address can be specified as either a dotted quadruple, or IPv6 colon notation, or as a symbolic name (only in the ip specification). Also, port can be specified as a number or as the mnemonic value from the /etc/services file. If a port is not specified, the default will be used. If an ip section is specified, the resolution can be made either by IPv4 or IPv6. If ip4 is specified, then only IPv4 resolutions will be permitted, and likewise with ip6. FDPort = This specifies the port number on which the Client listens for Director connections. It must agree with the FDPort specified in the Client resource of the Director's configuration file. The default is 9102. FDAddress = This record is optional, and if it is specified, it will cause the File daemon server (for Director connections) to bind to the specified IP-Address, which is either a domain name or an IP address specified as a dotted quadruple. If this record is not specified, the File daemon will bind to any available address (the default). FDSourceAddress = This record is optional, and if it is specified, it will cause the File daemon server (for Storage connections) to bind to the specified IP-Address, which is either a domain name or an IP address specified as a dotted quadruple. If this record is not specified, the kernel will choose the best address according to the routing table (the default). SDConnectTimeout = This record defines an interval of time that the File daemon will try to connect to the Storage daemon. The default is 30 minutes. If no connection is made in the specified time interval, the File daemon cancels the Job. Maximum Network Buffer Size = where specifies the initial network buffer size to use with the File daemon. This size will be adjusted down if it is too large until it is accepted by the OS. Please use care in setting this value since if it is too large, it will be trimmed by 512 bytes until the OS is happy, which may require a large number of system calls. The default value is 65,536 bytes. The maximum value is 1,000,000 bytes. Note, on certain Windows machines, there are reports that the transfer rates are very slow and this seems to be related to the default 65,536 size. On systems where the transfer rates seem abnormally slow compared to other systems, you might try setting the Maximum Network Buffer Size to 32,768 in both the File daemon and in the Storage daemon. Maximum Bandwidth Per Job = The speed parameter specifies the maximum allowed bandwidth in bytes per second that a job may use. You may specify the following speed parameter modifiers: kb/s (1,000 bytes per second), k/s (1,024 bytes per second), mb/s (1,000,000 bytes per second), or m/s (1,048,576 bytes per second). The use of TLS, TLS PSK, CommLine compression and Deduplication can interfer with the value set with the Directive. CommCompression = If the two Bacula components (DIR, FD, SD, bconsole) have the comm line compression enabled, the line compression will be enabled. The default value is yes. In many cases, the volume of data transmitted across the communications line can be reduced by a factor of three when this directive is enabled. In the case that the compression is not effective, Bacula turns it off on a record by record basis. If you are backing up data that is already compressed the comm line compression will not be effective, and you are likely to end up with an average compression ratio that is very small. In this case, Bacula reports None in the Job report. DisableCommand = The Disable Command adds security to your File daemon by disabling certain commands globally. The commands that can be disabled are: backupcancelsetdebug=setbandwidth=estimatefilesetJobId=level =restoreendrestoresessionstatus.statusstorageverifyRunBeforeNowRunBeforeJobRunAfterJobRunaccurate One or more of these command keywords can be placed in quotes and separated by spaces on the Disable Command directive line. Note: the commands must be written exactly as they appear above. SD Packet Check = The SDPacketCheck takes a positive integer. The integer if zero turns off the feature. If the integer is greater than zero, it is the number of packets that the FileDaemon will send to the Storage Daemon before to send a POLL request and wait for the Storage Daemon answer. The default value is 0. If the time between two POLL requests is too short (less than few seconds) and the number of bytes transfered is less than few hundred of MB, the value of the SDPacketCheck is increased dynamically. TLS Enable = Enable TLS support. If TLS is not enabled, none of the other TLS directives have any effect. In other words, even if you set TLS Require = yes you need to have TLS enabled or TLS will not be used. TLS PSK Enable = Enable or Disable automatic TLS PSK support. TLS PSK is enabled by default between all Bacula components. The Pre-Shared Key used between the programs is the Bacula password. If both TLS Enable and TLS PSK Enable are enabled, the system will use TLS certificates. TLS Require = Require TLS or TLS-PSK encryption. This directive is ignored unless one of TLS Enable or TLS PSK Enable is set to yes. If TLS is not required while TLS or TLS-PSK are enabled, then the Bacula component will connect with other components either with or without TLS or TLS-PSK If TLS or TLS-PSK is enabled and TLS is required, then the Bacula component will refuse any connection request that does not use TLS. TLS Authenticate = When TLS Authenticate is enabled, after doing the CRAM-MD5 authentication, Bacula will also do TLS authentication, then TLS encryption will be turned off, and the rest of the communication between the two Bacula components will be done without encryption. If TLS-PSK is used instead of the regular TLS, the encryption is turned off after the TLS-PSK authentication step. If you want to encrypt communications data, use the normal TLS directives but do not turn on TLS Authenticate. TLS Certificate = The full path and filename of a PEM encoded TLS certificate. It will be used as either a client or server certificate, depending on the connection direction. PEM stands for Privacy Enhanced Mail, but in this context refers to how the certificates are encoded. This format is used because PEM files are base64 encoded and hence ASCII text based rather than binary. They may also contain encrypted information. This directive is required in a server context, but it may not be specified in a client context if TLS Verify Peer is set to no in the corresponding server context. Example: File Daemon configuration file (bacula-fd.conf), Director resource configuration has TLS Verify Peer = no: Director { Name = bacula-dir Password = "password" Address = director.example.com # TLS configuration directives TLS Enable = yes TLS Require = yes TLS Verify Peer = no TLS CA Certificate File = /opt/bacula/ssl/certs/root_cert.pem TLS Certificate = /opt/bacula/ssl/certs/client1_cert.pem TLS Key = /opt/bacula/ssl/keys/client1_key.pem } Having TLS Verify Peer = no, means the File Daemon, server context, will not check Directors public certificate, client context. There is no need to specify TLS Certificate File neither TLS Key directives in the Client resource, director configuration file. We can have the below client configuration in bacula-dir.conf: Client { Name = client1-fd Address = client1.example.com FDPort = 9102 Catalog = MyCatalog Password = "password" ... # TLS configuration directives TLS Enable = yes TLS Require = yes TLS CA Certificate File = /opt/bacula/ssl/certs/ca_client1_cert.pem } TLS Key = The full path and filename of a PEM encoded TLS private key. It must correspond to the TLS certificate. TLS Verify Peer = Verify peer certificate. Instructs server to request and verify the client's X.509 certificate. Any client certificate signed by a known-CA will be accepted. Additionally, the client's X509 certificate Common Name must meet the value of the Address directive. If the TLSAllowed CN onfiguration directive is used, the client's x509 certificate Common Name must also correspond to one of the CN specified in the TLS Allowed CN directive. This directive is valid only for a server and not in client context. The default is yes. TLS Allowed CN = Common name attribute of allowed peer certificates. This directive is valid for a server and in a client context. If this directive is specified, the peer certificate will be verified against this list. In the case this directive is configured on a server side, the allowed CN list will not be checked if TLS Verify Peer is set to no (TLS Verify Peer is yes by default). This can be used to ensure that only the CN-approved component may connect. This directive may be specified more than once. In the case this directive is configured in a server side, the allowed CN list will only be checked if TLS Verify Peer = yes (default). For example, in bacula-fd.conf, Director resource definition: Director { Name = bacula-dir Password = "password" Address = director.example.com # TLS configuration directives TLS Enable = yes TLS Require = yes # if TLS Verify Peer = no, then TLS Allowed CN will not be checked. TLS Verify Peer = yes TLS Allowed CN = director.example.com TLS CA Certificate File = /opt/bacula/ssl/certs/root_cert.pem TLS Certificate = /opt/bacula/ssl/certs/client1_cert.pem TLS Key = /opt/bacula/ssl/keys/client1_key.pem } In the case this directive is configured in a client side, the allowed CN list will always be checked. Client { Name = client1-fd Address = client1.example.com FDPort = 9102 Catalog = MyCatalog Password = "password" ... # TLS configuration directives TLS Enable = yes TLS Require = yes # the Allowed CN will be checked for this client by director # the client's certificate Common Name must match any of # the values of the Allowed CN list TLS Allowed CN = client1.example.com TLS CA Certificate File = /opt/bacula/ssl/certs/ca_client1_cert.pem TLS Certificate = /opt/bacula/ssl/certs/director_cert.pem TLS Key = /opt/bacula/ssl/keys/director_key.pem } If the client doesnt provide a certificate with a Common Name that meets any value in the TLS Allowed CN list, an error message will be issued: 16-Nov 17:30 bacula-dir JobId 0: Fatal error: bnet.c:273 TLS certificateverification failed. Peer certificate did not match a required commonName16-Nov 17:30 bacula-dir JobId 0: Fatal error: TLS negotiation failed with FD at"192.168.100.2:9102". TLS CA Certificate File = The full path and filename specifying a PEM encoded TLS CA certificate(s). Multiple certificates are permitted in the file. One of TLS CA Certificate File or TLS CA Certificate Dir are required in a server context, unless TLS Verify Peer (see above) is set to no, and are always required in a client context. TLS CA Certificate Dir = Full path to TLS CA certificate directory. In the current implementation, certificates must be stored PEM encoded with OpenSSL-compatible hashes, which is the subject name's hash and an extension of .0. One of TLS CA Certificate File or TLS CA Certificate Dir are required in a server context, unless TLS Verify Peer is set to no, and are always required in a client context. TLS DH File = Path to PEM encoded Diffie-Hellman parameter file. If this directive is specified, DH key exchange will be used for the ephemeral keying, allowing for forward secrecy of communications. DH key exchange adds an additional level of security because the key used for encryption/decryption by the server and the client is computed on each end and thus is never passed over the network if Diffie-Hellman key exchange is used. Even if DH key exchange is not used, the encryption/decryption key is always passed encrypted. This directive is only valid within a server context. To generate the parameter file, you may use openssl: openssl dhparam -out dh4096.pem -5 4096 Thus multiple Directors may be authorized to use this Client's services. Each Director will have a different name, and normally a different password as well. The following is an example of a valid Director resource definition: ## List Directors who are permitted to contact the File daemon#Director { Name = HeadMan Password = very_good # password HeadMan must supply}Director { Name = Worker Password = not_as_good Monitor = Yes} The Schedule Resource The Schedule resource provides a means of automatically scheduling the connection of the Client to the Director. Each Director resource can have a different Schedule resource. Schedule Start of the Schedule directives. No Schedule resource is required. If no Schedule is used, the Client will connect automatically to the Director at the startup. Name = The name of the schedule being defined. The Name directive is required. Enabled = This directive allows you to enable or disable the Schedule resource. Connect = The Connect directive defines when a Client should connect to a Director. You may specify multiple Connect directives within a Schedule resource. If you do, they will all be applied (i.e. multiple schedules). If you have two Connect directives that start at the same time, two connections will start at the same time (well, within one second of each other). It is not recommended to have multiple connections at the same time. Connect-options are specified as: keyword=value where the keyword is MaxConnectTime and the value is as defined on the respective directive formats for the Job resource. You may specify multiple Connect-options on one Connect directive by separating them with one or more spaces or by separating them with a trailing comma. For example: MaxConnectTime= specifies how much time the connection will be attempt and active. The is similar to what exists for Job scheduling. See (here) for more information. An example schedule resource that is named WeeklyCycle and connects a director each Sunday at 2:05am and an on Monday through Saturday at 2:05am is: Schedule { Name = "WeeklyCycle" Connect = MaxConnectTime=2h sun at 2:05 Connect = MaxConnectTime=2h mon-sat at 2:05} In this example, the Job for this client should be schedule to start between 2:05 and 4:05 during the week. The Bacula administrator will be able to use commands such as status client or estimate betwen 2:05 and 4:05. The Message Resource Please see the Messages Resource Chapter of this manual for the details of the Messages Resource. There must be at least one Message resource in the Client configuration file. The Statistics Resource The Statistics Resource defines the statistic collector function that can send information to a Graphite instance, to a CSV file or to bconsole with the statistics command (See (here) for more information). Statistics Start of the Statistics resource. Statistics directives are optional. Name = The Statistics directive name is used by the system administrator. This directive is required. Description = The text field contains a description of the Statistics resource that will be displayed in the graphical user interface. This directive is optional. Interval = The Intervall directive instructs the Statistics collector thread how long it should sleep between every collection iteration. This directive is optional and the default value is 300 seconds. Type = The Type directive specifies the Statistics backend, which may be one of the following: CSV or Graphite. This directive is required. CSV is a simple file level backend which saves all required metrics with the following format to the file: , , Where is a standard Unix time (a number of seconds from 1/01/1970) with local timezone as returned by a system call time(), is a Bacula metric string and is a metric value which could be in numeric format (int/float) or a string "True" or "False" for boolean variable. The CSV backend requires the File = parameter. Graphite is a network backend which will send all required metrics to a Graphite server. The Graphite backend requires the Host = and Port = directives to be set. If the Graphite server is not available, the metrics are automatically spooled in the working directory. When the server can be reached again, spooled metrics are despooled automatically and the spooling function is suspended. Metrics = The Metrics directive allow metric filtering and is a filter which enables to use * and ? characters to match the required metric name in the same way as found in shell wildcard resolution. You can exclude filtered metric with ! prefix. You can define any number of filters for a single Statistics. Metrics filter is executed in order as found in configuration. This directive is optional and if not used all available metrics will be saved by this collector backend. Example: # Include all metric starting with "bacula.jobs"Metrics = "bacula.jobs.*"# Exclude any metric starting with "bacula.jobs"Metrics = "!bacula.jobs.*" Prefix = The Prefix allows to alter the metrics name saved by collector to distinguish between different installations or daemons. The prefix string will be added to metric name as: . This directive is optional. File = The File is used by the CSV collector backend and point to the full path and filename of the file where metrics will be saved. With the CSV type, the File directive is required. The collector thread must have the permissions to write to the selected file or create a new file if the file doesn't exist. If collector is unable to write to the file or create a new one then the collection terminates and an error message will be generated. The file is only open during the dump and is closed otherwise. Statistics file rotation could be executed by a mv shell command. Host = The Host directive is used for Graphite backend and specify the hostname or the IP address of the Graphite server. When the directive Type is set to Graphite, the Host directive is required. Host = The Port directive is used for Graphite backend and specify the TCP port number of the Graphite server. When the directive Type is set to Graphite, the Port directive is required. Example Client Configuration File An example File Daemon configuration file might be the following: ## Default Bacula File Daemon Configuration file## For Bacula release 1.35.2 (16 August 2004) -- gentoo 1.4.16## There is not much to change here except perhaps to# set the Director's name and File daemon's name# to something more appropriate for your site.### List Directors who are permitted to contact this File daemon#Director { Name = rufus-dir Password = "/LqPRkX++saVyQE7w7mmiFg/qxYc1kufww6FEyY/47jU"}## Restricted Director, used by tray-monitor to get the# status of the file daemon#Director { Name = rufus-mon Password = "FYpq4yyI1y562EMS35bA0J0QC0M2L3t5cZObxT3XQxgxppTn" Monitor = yes}## "Global" File daemon configuration specifications#FileDaemon { # this is me Name = rufus-fd WorkingDirectory = $HOME/bacula/bin/working Pid Directory = $HOME/bacula/bin/working}# Send all messages except skipped files back to DirectorMessages { Name = Standard director = rufus-dir = all, !skipped}

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