

## Technical Overview

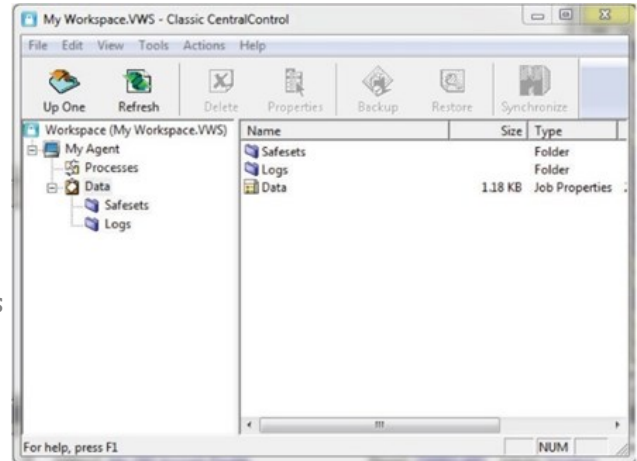
The (YB)Backup cloud backup service enables you to meet the growing business and regulatory demands for data survivability and retention. Cloud backup offers broad support for operating systems and platforms. Like other (YB) Backup backup products, Cloud makes it easy to back up and restore critical data within individual databases, mailboxes, or cluster nodes using plug-ins for Microsoft Exchange, SQL Server, SharePoint, Cluster Services, and Oracle Platforms. Cloud technology builds backups dynamically, so there is no need to restore from multiple incremental backups.

(YB)Backup Cloud scales to accommodate your company's growth patterns and requirements. You can efficiently manage terabytes of backup data. Efficiency tools within the software - such as delta block level processing, data compression and processing only new and changed data - increases the speed of your backup operations. Even open files are backed up seamlessly using (YB)Backup Cloud software.

End-to-end data encryption means your data is encrypted before, during and after transmission over the internet. There are no "back door" encryption keys, meaning that only the encryption key holder can access stored data.

The following are some key points to consider when evaluating your company's data protection procedures:

- Data Loss Prevention
- Infrastructure Scalability
- Comprehensive Data Security
- Fast Data Restoration
- Total Cost of Ownership
- Solution for Critical Applications and Distributed Data
- Intuitive User Interface



### Service Overview

(YB)Backup Cloud is a powerful and easy-to-use solution designed to provide data protection to all businesses. The automated service is built around a client software program, the Agent, which runs on a schedule, typically once a day. The program identifies new or changed data for backup, and then compresses, encrypts, and transfers the data to the (YB)Backup Data Center.

### Client Software – Agent

The proprietary client software used by (YB)Backup is designed to perform unattended and on-demand backups and selective restoration of a user's specified files. The Agent software runs as a service on each machine that will be backed up. The Agent serves as a gateway to our secure data center: User data is tagged for backup within a Backup Set and flows through the Agent, where it is compressed, encrypted and sent to our data center for storage.

### Agent System Requirements

The (YB)Backup Cloud service requires minimal hardware resources to operate and will run on any system that is capable of running the Operating System of a particular Agent.

### Automated Schedule and Retention

During the installation process, you will decide the start time and frequency of your automated backup. You will also establish the retention options for your data. (YB)Backup Cloud provides numerous options for defining and managing your backup schedule and

retention options, enabling you to keep just days' worth of backups or multiple year snapshots if you have longer retention needs for your business.

### **Initial Backup**

The initial backup is the process of sending all client selected data to the Data Center in its encrypted and compressed format.

### **Delta Block Processing**

After completion of the initial backup, (YB)Backup Cloud's delta block technology only processes the actual changes to your data. Delta blocking technology scans your existing data in small blocks, searching for changes in the data since the last backup. Once found, only the unique block level changes are processed for offsite storage to maximize backup security and speed.

Block level changes enhance security by only sending bits and pieces of data to complete a daily full backup. Complete files are not sent, only fragments of files that would be unusable without the original data.

### **Encryption and Compression**

Once new data has been found for backup processing the client software will compress and encrypt the data and transfer that information to be established as a new generation (also referred to as a 'version'). (YB)Backup Cloud encryption can be set to either 128-bit or 256-bit AES encryption.

### **Encryption Key**

A random encryption key is generated by the software to ensure the highest level of security. Alternately, the customer can supply an encryption key that they **MUST** safely retain. If a customer chooses to provide their own encryption key and subsequently loses or misplaces the key, (YB)Backup will not be able to access the customer's data – even in an emergency.

### **Data Transfer**

The encrypted data is transferred over your existing internet connection to our secure Data Center. Current bandwidth is sufficient for large data transfers over a short period of time.

### **Usernames and Passwords**

The (YB)Backup cloud backup software agent can be configured post-install with a username and password. This username and password must be entered each time to gain access to our software.

### Proprietary Software Format

All client data is transmitted in the proprietary (YB)Backup Cloud software format, as well as being compressed and encrypted. Without a properly authorized Agent installation, and the initial backup, the data is unreadable.

### Platforms Supported

The following table describes (YB)Backup Cloud functionality on various operating systems:

APPLICATION	OPERATING SYSTEM	VERSION
Windows System Files	Windows 7 / Server 2003 / 2008 / 2012 R2	nTfs/fAT
Microsoft Exchange	Server 2003 / 2008 / 2012 R2	2003 / 2007 / 2010 / 2013 / 2016
Microsoft SQL Server	Server 2003 / 2008 / 2012 R2	2000 / 2005 / 2008 / 2012 / 2014
Microsoft SharePoint	Server 2003 / 2008 / 2012	2003 / 2007 / 2010 / 2013
Oracle	Server 2003 / 2008 / 2012 R2 Solaris 9 / 10	9i / 10g / 11g R2 / 12c R1
Linux	Red Hat 4 / 5 / 6 / 7 SUSE 11 / 12 / 13.2 CentOS 4 / 5 / 6 / 7	
Unix	hP UX 11i iBM AiX 5L / 6.1 / 7.1 / 7.2 Sun Solaris 9 / 10	
Microsoft Hyper-V	7.40a	
VMWare	5.1 / 5.5 / 6.0	
IBM iSeries	V5 / V6 / IBMi 7.1	
Novell Netware	6.0 / 6.5	

*\*Please contact (YB)Backup for available support of unlisted applications.*

### Reporting

The (YB)Backup Cloud reports module is an intuitive Web-based interface with an in-depth view into the backup jobs stored within the data vault. (YB)Backup Cloud allows you to create automated e-mail delivery of select backup data set reports to an individual or group of users. There are 19 total reports available to indicate everything from which backup jobs succeeded or failed (the Backup Status report) to graphical depictions of how much data storage has been used within some, or all, of your backup jobs (the Storage Totals report). Many compliance and auditing needs are easily addressed through (YB)Backup Cloud reports. Likewise, storage resource planning or future acquisitions are easier to estimate based on trend-based report data.

### **Data Restoration**

If there is a loss of data, be it a single lost file or a complete loss of all data, the process to restore the information is simple and fast. The end user is instructed by the software on how to access the data and how to quickly place it back into the system. (YB)Backup customer service department is available 24x7x365 for assistance if necessary. The following scenarios allow for different procedures of data restoration:

#### **Individual Files**

By logging into the CentralControl management interface you can select a version of individual files for data restoration. In addition, CentralControl provides the ability to search within backup sets for the location of individual files, directories or file extension.

#### **Loss of Customer Server/PC**

If the location in which the data resides becomes inaccessible (YB)Backup can send the data to an alternate location. Upon request, (YB)Backup can process the data on to a portable storage device and ship the device to an alternate location. The data will be shipped within its encrypted format and the encryption key will be required for the data restore process.

#### **Application-Centered Backup/Recovery**

(YB)Backup Cloud integrates with today's most popular applications via application-specific plug-ins. Supporting more applications than most solutions, plug-ins perform "hot" application backups and recover critical data within individual databases, mailboxes or cluster nodes. Available plug-ins support Microsoft Exchange (database and mailbox level), Microsoft SQL Server, Microsoft SharePoint Portal Server, Microsoft Cluster Services, Oracle, and VMware.

#### **Support for Virtual Server Environments**

(YB)Backup Cloud integrates with virtual server environments, such as those running VMware. Using a fully functional VMware application plug-in, Cloud offers disaster recovery protection of the entire virtual environment, including all guest systems and applications.

The VMware plug-in backs up the virtual machines while they are online. flexible, single-pass restores allow the virtual machines and critical applications to be recovered to either the original or alternate location. When teamed with ESX Server Agent, file-level restores also become an easy reality. The CentralControl management console is then used to protect both physical and virtual environments. Supported virtual platforms include:

*(YB)Backup Cloud supports VMWare ESX 4.1 and ESXi 4.1 through 5.5 and Hyper-V 7.30.*