SolveXia Business Continuity Planning

Business continuity planning is the term we use to describe all the steps we take at SolveXia to ensure that our service is up and running when you need it. As a 'software as a service' provider, our aim is to provide a service that is reliable and available 24 hours a day, every day of the year. In this document we describe the measures we have taken to reach this goal.

INFRASTRUCTURE

SolveXia's servers are housed at GoGrid's data centre in San Francisco. The building also houses "super-nodes" for Verizon and AT&T local phone service in San Francisco, and it is considered an "essential" facility because 911 emergency calls are routed here. We, through GoGrid's, share generators, power, cooling and fire suppression infrastructure with Verizon, including dual 2 Megawatt generators that support the critical power requirements and operations of the building. Our dedicated servers are secured, managed and monitored in a state-of-the-art facility.

DATA PROTECTION

The following sections discuss the measures in place to protect our clients' data.

No distributed data storage

The SolveXia platform applies a strict policy that no client or system data can be stored in any place other than the database. This means that the client side browser and the web application servers that provision the service to our clients never have data stored on them - even temporarily. This makes the data protection profile for the solution much easier to devise, manage and implement - and ensures that it is more resilient.

No interleaved data storage

The SolveXia platform applies a strict policy that client data can never be "interleaved" or "co-resident" in the same database. This is substantially different from the majority of SaaS offerings. Every client is assigned their own independent database which is secured and separately backed up. This makes data recovery more secure - and faster - as it isolates bodies of data in a way that facilitates accurate recovery on a per client basis.

Data storage protection

All client data stored in SolveXia's database is stored on a RAID 5 disk array.

Data backup schedule

The points below summarise the data backup schedule used for client data within SolveXia. This backup schedule provides for data recovery points every hour. This means that in the event of a service outage, on average, only 29 minutes of transactions can be lost. The worst case is 59 minutes of transactions being lost.

- A full database backup is taken daily at 0600 GMT
- A differential database backup is taken daily at 1800 GMT
- A transaction log backup is taken hourly

In addition to this backup schedule, we also have the ability to perform more frequent backups for clients as required. This allows the client data stored within the SolveXia platform to match

any existing data protection profiles and policies that clients have in place for other systems. Please speak to us directly if you have a need for a customised backup profile.

Location of data backup sets

The backups created in the above schedule are stored on a RAID 5 disk array attached to the local database server. This allows for extremely quick data recovery times when the root cause of the service outage does not destroy or invalidate the database server. These backup data sets are also copied to a physically separate backup drive array every hour to protect against the risk of data loss due to destruction of the database server itself. ServePath provides 24 x 7 engineering support to resolve any issues that may arise with the capture of backup data.

APPLICATION PROTECTION

Over and above the series of actions to ensure data protection, a set of measures are in place to protect the application itself so that the service continues to be delivered even in the event of an interruption.

Measure	Notes
MULTIPLE WEB APPLICATION SERVERS	The SolveXia service is designed to operate with multiple web applications servicing client workloads at any point in time. This allows one or more web application servers in the solution to fail without rendering the overall service unavailable. The precise number of servers provisioned is determined by forecast client transaction loads - with an additional 30% provided on top to support (a) spikes in load and (b) the ability of the web application server pool to "pick up" the workload of a failed server.
DYNAMIC LOAD BALANCING BETWEEN WEB APPLICATION SERVERS	The SolveXia service is designed to use dynamic load balancing to route client requests to a web application server that has been verified as "alive and well" within the past 10 seconds. This provides resiliency in the event of a web application server failing - in that the infrastructure will automatically route client requests to an operational web server.
CLUSTERED DATABASE SERVERS	The SolveXia service is designed to operate with multiple database servers that operate in a clustered fashion. This means that when one database node fails (either because of a hardware or software problem), another physical node will "take over" the workloads of that server within approximately 2 minutes.

PROCEDURAL VERIFICATION

An important part of providing a highly reliable service is to constantly test the procedures that are used to provide protection. The table below summarises the procedures that are tested regularly as part of our approach.

Process	Notes
Uninterruptable Power Supply Testing	This is tested at least monthly and whenever a change is made to the power infrastructure. This test ensures that the real time (battery-based) UPS power supplies engage with adequate charge when required (automatically). ServePath contacts all customers (including SolveXia) prior to these tests and they are conducted with no interruption of service.
Backup generator testing	This is tested at least monthly and whenever a change is made to the power infrastructure. This test ensures that the backup diesel generators used to supply power in a sustained power failure are in good working order and can deliver the required power to the data centre. ServePath contacts all customers (including SolveXia) prior to these tests and they are conducted with no interruption of service.
Confirmation that backups have completed successfully	SolveXia is notified daily with the status of the backup processes. These reports include details that confirm each client database has been backed up.
Confirmation that the data backups are of valid format	Every month SolveXia operations staff use sample client backup data to run through a trial restore process. This verifies that the format of the backup is being maintained in a manner that lends itself to recovery.

THE SERVEPATH DATA CENTRE

The Data Centre

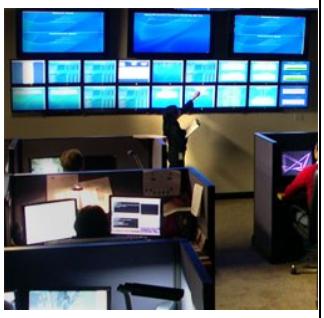
The ServePath data centre is located in the San Francisco Telecom Center, located just south of San Francisco's Financial District. This 100% occupied telecom building also houses AT&T and Verizon "super nodes".

Secure building originally used for storage of military tanks and equipment

Built on solid bedrock, seismically retrofit in 1999 to meet rigorous City of San Francisco building codes

Six separate fiber entrances with 2 fiber rooms. A large portion of the Bay Bridge Fiber Consortium terminates in the building (cross-bay Fiber).

State-of-the-art redundant systems for power, HVAC, fiber connectivity, seismic precautions and fire suppression.



Network Operations Center

GoGrid's Network Operations Center (NOC) is built right in the center of their support facilities and is staffed 24/7/365 by certified systems administrators and network engineers. The 21 screens that make up their NOC monitor everything from network traffic and performance to power, temperature and security systems to services, applications, known vulnerabilities and RAID array status on customer servers.

Large on-site NOC with 24/7 Engineers

Real-time monitoring and alerts for all critical systems

Customer level service and application monitoring.

Fire Suppression

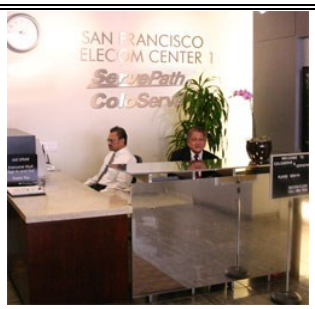
GoGrid's state-of-the-art fire suppression has three levels of protection.

Halon Fire Extinguishers

VESDA laser smoke detection with dry pipe suppression

Tightly defined pre-action zones for localized fire extinguishing

Monitored and maintained by both ServePath and MCI 24X7 on & off-site.

	**Security** GoGrid's data center maintains the highest possible standards for physical security. 24 x 7 security guards at front entrance Secondary check-in at our second floor data center 24 x 7 systems administrators / NOC on the data center floor
	**Cooling** ServePath has a significant cooling infrastructure, with dual redundant chilled water supply loops and multiple Liebert air conditioning units pumping cold air into the pressurized raised floor of their data center. n+1 Liebert VACs w/n+1 supply loops and chillers Up to 300 tons of cooling capacity that runs on MCI's chilled water systems Raised floor system for efficient distribution of cooling
	**Power Infrastructure** Their data center power is fed by conditioned UPS (uninterruptible power supply) electricity and with the following systems in place to ensure power back-up. Redundant power feeds with UPS power 2 x 2 megawatt generators that also power Verizon's local phone switches 20,000 gallons of diesel fuel on site, hot-refill ready
	**Fiber and Bandwidth Providers** ServePath operates its own Screaming-Fast Network™, featuring multi-homed bandwidth with connections to over 40 networks. They route traffic over major Tier 1 Internet backbones such as UUNet/MCI, Level 3, NTT/Verio, and AboveNet, with no low-quality bandwidth and plenty of network capacity for maximum reliability and scalability.