

Business Continuity FastFacts



The NASDAQ Stock Market Business Continuity Leadership in Capital Markets Preparedness

Overview

Today, NASDAQ sets the standard for excellence in industry-wide terrorism preparedness and contingency planning. The outcome of NASDAQ's long standing planning, investment, implementation, and testing of continuity initiatives has been evident in all recent events.

- NASDAQ was prepared for, and resilient to, the events of 9/11, and all systems remained fully operational throughout the week.
- NASDAQ was also prepared for, and resilient to, the blackout of August 2003 when the northeast power grid failed.

NASDAQ's resiliency during such large scale events is due in part to a focus on ensuring that backup redundancies and geographical diversification are an integral part of the operation. As a result, NASDAQ provides strategic guidance to both the government and the private sector. The FBI, Navy, various military officials, market participant customers, and the Secretary of the Treasury have toured NASDAQ technology facilities to learn about continuity and disaster recovery.

In addition, NASDAQ is fully capable of trading all 6,700 U.S. securities listed on NYSE, AMEX plus NASDAQ on our geographically diverse and resilient system if their respective trading floors were rendered inoperable for an extended period of time.

NASDAQ Data Centers/ Disaster Recovery

NASDAQ has two data centers that are more than 300 miles apart.

- Geographic diversity minimizes the risk of a single catastrophic event impacting both data centers.
- The data centers are located in different geologic and climatic zones and are on diverse regional power grids.
- Northeast Data Center – Primary technology center that has been in operation since NASDAQ's inception in 1971.
 - Significantly upgraded in 1997 and 2001.
 - Special bracing and construction since the State is in an active seismic zone.
 - Two diverse commercial power feeds backed up by four 1500 KW Detroit diesel generators provide a total capacity of 6000 Kilowatts.
 - Each power feed is capable of supporting the entire complex.
 - Three fuel tank configuration contains 36,000 gallons and provides fuel to support the entire facility for one week without refill.
 - Six 675 kilowatt rotary UPS motor generator systems.
 - 184 tons of batteries for instantaneous backup.

- Ring buss technology with 20 static transfer switch computer power centers that provide multiple power paths to critical trading systems.
- Protected by a 300 foot vehicle buffer zone with a 1,900 foot steel reinforced concrete perimeter wall and Emergency Hydraulic Vehicle Arrest Devices (VAD's) at all entrances.
- Physical security includes an onsite security management team, 60 CCTV digital color surveillance system, Geoffrey key card entry system, metal detector scanning, offsite mail screening, and fingerprinting and FBI based criminal records check of all employees and contractors.
- Mid-Atlantic Data Center – Disaster Recovery site, which has been in operation for 19 years.
 - Moved in 2005 to an undisclosed location further from Washington D.C. that better satisfies requirements for security, resiliency, and geographic diversity.
 - Real-time connectivity for NASDAQ disaster recovery.
 - Dual utility feeders, electrical service switchboards, six 2,000 KW generators, three UPS, 24x7 guard service, closed circuit surveillance, controlled access.
 - All market participants have full connectivity to backup data center and no single point of failure.
- Telecommunications - NASDAQ utilizes several extranet/network providers, each with diverse network connectivity into our two data centers.
 - Market participants have the option of selecting one or more of these providers, ensuring maximum protection.
 - Each market participant has diverse access to both the primary data center and the backup data center, a design which maximizes the likelihood of operational continuity of our market following a widespread event.
- Reliability - 99.98+% uptime for our trading systems.

NASDAQ Contingency Planning

NASDAQ is continually anticipating, evaluating, and preparing for contingencies.

- Crisis Management Plan - addresses actions senior management will take to communicate and respond to a catastrophic event affecting our market, employees and/or business operations.
- Business Continuity Plans (BCP) - addresses alternative strategies for continuing business operations in the event staff cannot gain access to their primary work location.
 - Plans are formalized, corporate wide, in place, current, and tested.
- Disaster Recovery Planning - maintains a constant state of readiness to ensure a continuous and orderly market if the primary data center becomes inoperable.
 - Disaster recovery is available for all core market systems.
 - Nine different recovery scenarios are documented & periodically tested.
 - In 2004, thirty DR tests covering 8 different scenarios were completed.
 - In 2004, conducted two market-wide tests from NASDAQ's backup site and primary site.
 - In 2005, twenty three DR tests were completed.
 - NASDAQ participates in industry wide tests such as the "Phase II" DR test sponsored by SIA on October 14, 2005.

- NASDAQ tests backup diesel generators every Friday to verify the generators' failover capability.
- Audits and reviews - performed by internal and external sources including the SEC, GAO 9/11 Commission, Internal and External Auditors.
- National, domestic and financial sector programs - active in FS/ISAC, FSSCC, CIP National Plan for our sector, DHS, Treasury, FBI computer crime units, and emerging computer crimes task forces.

Lessons Learned - Post Recent Events

Since September 11 and the Blackout, NASDAQ has identified key findings and made the necessary adjustments to its continuity initiatives. The following section highlights NASDAQ's developments in this area and other facts about continuity planning throughout these two specific occasions.

September 11, 2001

- At the time of the attacks and throughout the week of 9/11, trading was suspended but NASDAQ's systems and network continued to operate.
 - As a result, NASDAQ's primary concern was focused on the ability to connect to firms active in the NASDAQ marketplace and bring liquidity and order flow.
 - NASDAQ's systems operated throughout the day of 9/11 to allow access by firms so that they could reconcile their books and straighten out their affairs.
 - NASDAQ's operated continuously throughout the rest of the week for this purpose and to allow firms to test connectivity in preparation for resumption of trading.
 - In the week that followed, NASDAQ worked closely with all participants including the government equity and options exchanges and NASDAQ market makers and the 4,000+ companies that listed their shares at that time.
- Notwithstanding this success, after 9/11 NASDAQ identified and implemented additional improvements.
 - More frequent testing was conducted with the backup site – quarterly testing was increased to monthly and market participants are selectively invited to take part.
 - The buffer zone around the data center was increased.
 - A fingerprinting policy was implemented for employees and contractors.
 - A separate facility was established for receiving, x-raying, and opening all U.S. and commercially delivered mail and packages.
 - A single facility entryway with body and personal effects x-ray screening was implemented.

Blackout August 14, 2003

- Although large portions of the Northeastern United States were out of business, NASDAQ was fully operational during the blackout.
- While the event caused both feeders to fail at 16:10:46, NASDAQ's rotary UPS motor generator systems temporarily took the load with battery power, the first Detroit diesel generator was on line at 16:11:01, and the other 3 generators at were available at 16:11:05.
- NASDAQ transitioned back to utility power at 23:01 after assurances of stable power.
- NASDAQ's mid-Atlantic backup site remained unaffected, validating the benefits of NASDAQ's geographical diversity.