ShakeCast™ Quarterly

CONTACT US / HELP DESK

Remember, if you need to get in touch with us, email shakecast-help@usgs.gov or see the ShakeCast wiki for more information.

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SHAKECAST TEAM

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What's New in ShakeCast: Introducing Version 3.0!

Good News! ShakeCast 3.0 is here, and it is available for cloud-based ShakeCast hosting. What's this mean for you? Well, for one, you can now run ShakeCast with little or no hardware investment, achieve off-site redundancy, and avoid frustrating internal IT roadblocks. Alternatively, you can continue to host ShakeCast internally, but update to a Virtual Machine (VM) environment to avoid challenging hurdles introduced by local idiosyncrasies of your hardware, software, or network. Either, way, ShakeCast V3 is a lot easier to install, use, and maintain.

Some of the new features, documented in the ShakeCast User Guide, include:

- Support for Linux VM/Cloud (Amazon Web Services)
- Windows 8/7 stand alone image (coming soon; contact us)
- Drag-and-drop user data upload (gotta' love this one).

Important documents you'll need to get started are:

- ShakeCast V3 Cloud Installation Guide
- Updated ShakeCast User Guide (Draft)
- Example user-specific data files (users, facilities, fragilities, configurations)
- Steps for Migrating from V2 to V3

Setting up your own cloud-based ShakeCast instance requires you to get an inexpensive (free for one-year, typically) cloud services account. Once set up with an AWS account, copying the ShakeCast software disk image ("instance") requires a quick electronic approval from the USGS ShakeCast team.

ShakeCast Team Profile: Paul Geimer

Paul Geimer has been a support member of the ShakeCast Team since the beginning of his internship with the USGS in the summer of 2012. He will be stepping down from the USGS and moving to Montana after graduating in May from next-door neighbor Colorado School of Mines with a degree in Geophysical Engineering.

After first arriving at Mines in 2010, Paul knew that he wanted to work at the USGS National Earthquake Information Center. He was given an opportunity by David Wald to come onboard as a technical writer,

User Profile: **Santa Clara Valley Water District**

Coyote Dam and Reservoir, currently the second largest by volume operated by SCVWD, is located on the Calaveras Fault.

Sector	Critical lifeline utility, local government
Coverage	Santa Clara Valley, CA
Facilities	Earthen/rock fill dams, water treatment plants
Fragilities	Factor of safety metrics based on fragility curves
Usage	Earthen dam post-earthquake inspection prioritization
Status	Operational
Contact Info	Brett Baker, Asst. Engineering Geologist

The Santa Clara Valley Water District (SCVWD) manages water resources for approximately two million people across Silicon Valley and Santa Clara County. In addition to providing flood protection and maintaining healthy wildlife habitats along more than 800 miles of streams, SCVWD is responsible for ensuring the continued structural integrity of earthen/rock fill dams. The reservoirs supported by these dams represent a significant flooding hazard in the event of an earthquake, as they contain 25% of the water supply for the County.

With a large potential earthquake hazard to mitigate, as facilities such as the Coyote Dam reach across the active Calaveras Fault, the SCVWD relies on factor of safety metrics for reservoir dams. This metric is a variable quantity, based on factors such as current construction, applied load due to fill levels, and ShakeCast fragility curves. Combining these factors allows the SCVWD to distinguish between two dams with the same fragility curves and assign unique factors of safety for each.

Implementation of specific features within the SCVWD ShakeCast system has been facilitating through communication with the State of California Division of Safety of Dams, a regulator to the SCVWD that had previously implemented ShakeCast fragility curves to SCVWD facilities within its own database. Further ShakeCast assistance has come from other local agencies and regulators, including EBMUD (previously profiled) with regards to the inclusion of pipelines into a facility database. This level of outreach by SCVWD has allowed for increased efficiencies in the form of saved taxpayer funds as well as increased factors of safety for all facilities.

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with responsibilities that have evolved over time. In his two years at the USGS, Paul has helped on a variety of projects, from trademarking ShakeCast, ShakeMap, and Did You Feel It?, to building the ShakeCast wiki, and editing ShakeCast Quarterly. He has been able to work with interns and graduate students from across the country and the world, many of whom have motivated Paul to apply to PhD programs in the near future.

Among Paul's extracurricular endeavors with his peers while at USGS was the use of ShakeMap to explore the impacts of M9.0 earthquake centered in Golden, Colorado! In his time away from school and work, Paul is a four-year member of the Mines varsity cross-country and track and field teams and an active member of the Blue Key Honor Society.

User Profile: **ImageCat, Inc.**

ImageCat, Inc. is an international risk management company, whose mission is to support global risk assessment and disaster management through the development of advanced software solutions. ImageCat works with structural engineering firms as well as governments, NGOs, and various other research and private organizations to implement the ShakeCast application in corporate IT environments for post-event response management. Disaster responses have been developed for major events such as the Northridge, Niigata, and Bam earthquakes

Recently, ImageCat worked with Nabih Youssef Associates, a California structural engineering firm providing specialized structural and earthquake engineering consulting, to implement ShakeCast for the University of Southern California, where it is used on the main University Park campus as well as the Health Sciences campus in Los Angeles.

In addition to consulting services, ImageCat has developed several online applications that incorporate ShakeCast for risk mitigation and rapid post-earthquake loss assessment.

In the aftermath of an earthquake, ImageCat applications utilize the ground shaking intensity maps provided by ShakeCast and perform property damage and financial impact assessments to help clients understand and manage their unique post-earthquake consequences. In high risk regions with anticipated seismicity, applications such as SeismiCat and recently released Inhance integrate a range of hazard databases to quantify property exposure and building evaluations for use by engineers, insurers, and brokers.

Sector Coverage	Commercial
	Global
Facilities	Client properties including bridges and buildings
Fragilities	Ground motion intensities, other
Usage	Integration with in-house online loss estimation programs
Status	Operational
Contact Info	Yajie (Jerry) J. Lee, Technical Manager, Earthquake Risk Services

Shake Cast Team Profile: Jason Livingston

Jason Livingston is the newest ShakeCast Team member, brought on to help fill the technical support void that was created by the departure of Travis Lawall. Jason majored in Microsoft Server Administration from Red Rocks Community College in 2012, during which time he began a part time internship with the USGS working on a database team. Working in a full-time student IT position at the USGS here in Golden, Colorado, and part time on ShakeCast support, Jason has continued his education at Metropolitan State University of Denver. Now in his junior year, he expects to major in Management of Information Systems.

The role that Jason has been asked to fill entails a delicate balancing act between communication skills and IT prowess. In regard to both of these abilities, Jason is well prepared for the job. With respect to IT, Jason has years of experience, ranging back before his formal education. He has been building computers from scratch for over a decade and taking programming and data-base management classes for nearly as long.

In his eight years of experience prior to the USGS, Jason realized his ability to simply communicate problems and solutions to customers, acknowledging that everyone "deserves an appropriate and relevant answer" to a question. This same philosophy has carried over to the USGS, where Jason genuinely enjoys solving IT problems and learning about database solutions. When Jason says, "Balancing IT skills along with communication skills makes the challenge that much more fun," we know he'll be a great fit here on the ShakeCast Team!

Upcoming Meetings

Tenth U.S. National Conference on Earthquake Engineering
    July 21-24, 2014, Anchorage, Alaska
- Wald, D. J., K. Lin and L. L. Turner (2014). U.S. Geological Survey's ShakeCast: A Cloud-based Future

Recent Reports & Publications

Lin, K., D. J. Wald, and L. Turner (2014). ShakeCast User Guide (Draft)

Wald, D. J., K. Lin, and L. Turner (2013). Connecting the DOTs: Expanding the capabilities of the USGS ShakeCast Rapid Post-Earthquake Assessment System for Departments of Transportation, *Proc. of the Seventh National Seismic Conference on Bridges and Highways*, Oakland, 11 pp.

Wald, D. J., K. Lin, and L. Turner (2014). U.S. Geological Survey's ShakeCast System: A Cloud-based Future, *Proc. of the Tenth U.S. National Conference on Earthquake Engineering, Anchorage, Alaska, 12 pp*.