



DISASTER RECOVERY AND YOUR EVOLVING CLOUD STRATEGY

AN RCS WHITE PAPER

What happens when things go wrong — and how the cloud can help

When the [WannaCry ransomware attack](#) erupted in 2017, it made headlines around the world, providing excruciating evidence of just how vulnerable business enterprises can be to attacks on their computing infrastructures.

That hack targeted computers running Microsoft Windows. It encrypted data and demanded ransom payments in bitcoin, spreading to more than a quarter of a million computers across the United States and crippling many industries. And it is still a danger today.

Ransomware generally “is almost like a sport,” says Philippe Generali, president/CEO of RCS Worldwide, who speaks to industry groups about this threat. “And it’s only the beginning.”

Broadcasters more than most businesses can ill afford even a minute of downtime. Unfortunately, media organizations are one of the sectors that bad actors target most frequently, right after government agencies, telecoms and energy companies.

“It’s fun’ to cripple a TV station or a radio station — it makes a lot of news, it gets people talking,” Generali says. “So we in the media are a big target.”

[CryptoLocker malware](#) has been a particular favorite of attackers who go after broadcasters. Imagine the morning radio show host who gets an email that reads, “Your Amazon delivery is about to arrive today; we’re going to invoice you.” The host, unsure whether they had ordered something, selects the attachment. That’s all it takes for a virus to access a station’s valuable assets.

“The malware explores your networks and all the computers on them,” Generali said. “Then it searches for media files — pictures, audio files, video files — and as it finds them, it puts a wrapper around them so they can’t be accessed by your automation software — or by anybody.”

Then a pop-up appears on the screen informing the user they have been infected by CryptoLocker. And a countdown timer starts right in front of their eyes.

“CryptoLocker tells you, ‘No worries. We have the solution to your problem. But you need a security key that will unlock your files,’” Generali says.

“Meanwhile, on the screen, the DJ sees nothing but ‘File not found,’ ‘File not found,’ ‘File not found.’ No commercials, no songs — files not found.”



YOU NEED A CLOUD STRATEGY



DISASTER RECOVERY

Your assets & your sound are checked for integrity



TECHNOLOGY FACTORS

Hardware & software obsolescence



COST FACTORS

Overhead / Pay for what you use



COLLABORATION FACTORS

Workflow

That's when frantic calls start — to the chief engineer, to the PD, to anyone who might be able to help. Is there any way to play the station's commercials? Does the station have CDs with music backups? (What's a CD?) The engineer tries a backup computer only to find the same message on the screen: File not found.

"The only way to solve this is to shut down every single one of your computers and essentially clean them — or do what the hackers tell you on the screen: 'Just send \$50,000 in bitcoin to this address and we'll send you the key to unlock your file.' But, by the way, within an hour, it's going to cost \$55,000. Within three hours it's going to be \$65,000. And if you don't send it within 48 hours, you will never recover your files."

Under such pressure, some stations pay, while others hold out.

Yet, law enforcement organizations such as the [FBI do not support paying ransoms](#), which provide no guarantee of getting data back, encourage perpetrators to target more victims and prompt other criminals to do the same. Paying ransom [might even be illegal](#). So it's a very difficult situation to be in.

And it isn't a hypothetical scenario. Many broadcasters

have suffered such attacks.

There are even companies out there that provide ransomware as a service. "If you want to do ransomware to your worst enemy, you can hire a ransomware company and they will take a cut of whatever you collect."

THE LANGUAGE OF SHIPPING

Generali says he wants broadcasters to know they can fight back and defend against such assaults by adopting a smart cloud strategy, one that provides enhanced security as well as a means to get back on the air quickly.

That's the purpose of the [RCS Disaster Recovery platform](#), which Generali describes as a high-tech safety net that automatically and constantly uploads a station's content, including audio, schedules and metadata, to the cloud, even while daily station operations are continuing locally.

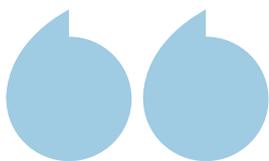
"Essentially, we've created a cloud-based safety net of our Zetta automation system," Generali says.

When a crisis occurs, the station can run its operation directly from the cloud platform while retaining the ability to add audio, logs and voicetracks. When the station is ready to return to its normal live output, RCS Disaster Recovery is ready with all of the original data.

Generali says his goal in proselytizing on this topic is to introduce cloud concepts to broadcasters and get them thinking about how cloud-based tools like RCS Disaster Recovery can help them.

The major players providing cloud capacity are Amazon Web Services, Microsoft and Google. Much of the credit for their popularity goes to Amazon, which first built massive computing resources to deal with heavy seasonal ordering demands and then found itself with powerful unused resources for much of each year.

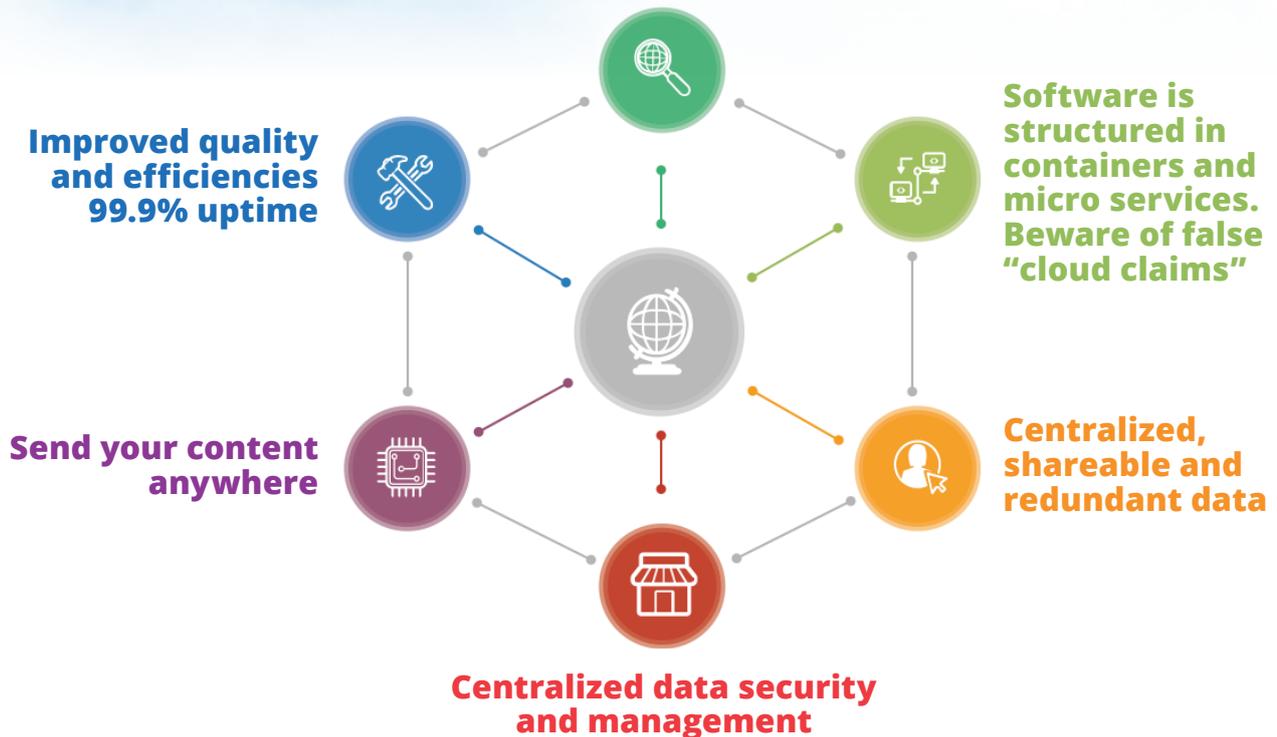
"Amazon said, 'What if we found a way to rent out those CPU cycles, so people can come in and use our computers



RCS Disaster Recovery will store all of your assets, check for integrity every minute, and tell you when there is something wrong.

CLOUD PRIMER

AWS, MICROSOFT, GOOGLE



when we don't need them?" From Amazon's internal innovation was born a new and wildly popular business-service model.

Generali notes that much of the nomenclature around the cloud comes from the shipping industry, which for centuries struggled with inefficient methods of loading cargo. In the 20th century, innovators began using standardized metal containers to fit into purpose-built vessels.

"The container is such a convenient way of sending products around. It doesn't care on what ship it travels or what's inside. It's convenient in price, too."

That history is why discussion of cloud strategies includes terminology such as [Docker, Containers and Kubernetes](#). Like cargo in a shipping module, software in the cloud resides in a "container," and it can run on any computer. Cloud systems orchestrate the movement of those containers.

NOT JUST BACKUP

Peace of mind is a big selling point of a cloud strategy. But Generali says the benefits of using the cloud for station automation will eventually go beyond disaster recovery.

"Our vision is any station can play from the cloud, it's not only a backup and a place to store content, it's a cloud-based playout system. And in the cloud, there's no Windows operating system for hackers to use to get at you. We work only in Linux."

Users access their assets with a log-in, no different from how they might do their personal banking. "It's a browser.

Log in and you're in front of your system, whether it's music scheduling, automation, your traffic."

With a cloud-based playout system, the software is updated automatically as older versions become obsolete. Further, your system can be scaled. "With a cloud system, again you just pay for what you use — small users, small systems; big-time users, big systems."

Station programmers benefit from enhanced flexibility. "You can create cloud content to feed your FM transmitter as your main air-chain system. But maybe you also want to create a station just for a short time — say, because an artist passed away. You want to create a special about the artist

When you operate from the cloud, you have no software to update, no hardware to update, no equipment to maintain, no real estate to dedicate to technology.



— not on the air, but on the internet. You can create that for a day or several days.”

Similarly, a station might launch a Christmas channel to run for one month and would pay the cloud cost only for that period.

“You won’t have to pay for an extra machine; you just use a little bit of cloud CPU. It costs very little.”

This approach recently was used to create a radio stream for the European Parliament.

This also allows programmers the flexibility to create experimental stations. If a format becomes popular online, it could immediately be redirected to one of your company’s on-air signals.

TECH-FRIENDLY

Another plus is centralization of data and its security management.

“You can control what’s going on from one place; and once the content and logs are up, you can send it anywhere — to your FM transmitter, to your DAB, to your internet stream,” Generali says.

Collaboration is supported because team members can work from anywhere via browser, accessing common data and working on common assets and logs without conflicts. If a station has a top talent who wants to work from home or another market, it’s easily supported.

“There’s flexibility for the technician, also,” Generali says. User rights can be added, changed or removed when someone joins or leaves the company. A large dashboard provides full control and access on screen. “You can see which streams are doing well, which streams are getting busy, where the listenership is going up and we’re spinning a

new container to serve your users and your listeners.”

Audio processing and ratings encoding can be done in the cloud as well. Maintenance is minimal; and large enterprises can save a significant amount just in the time saved of not having to roll out new software to every one of their machines regularly.

“And remember, the software container does not care where it runs. We’ve run Zetta Cloud inside a sound processing computer. We’ve run it inside a little computer box purpose-built to be put at the foot of the transmitter in case there’s a problem with the internet transmission. That little box can start playing songs, commercials and voice tracks if necessary. One transmitter manufacturer even asked me if our software could run on the CPU in their transmitter. I said, ‘No problem.’”

You won’t have to pay for an extra machine; you just use a little bit of cloud CPU. It costs very little.

TECHNICAL FLEXIBILITY



REMOTE ACCESS

No need to go anywhere to find out what is going on



USER'S RIGHTS

You can grant or revoke access instantly



FAST

Everything happens in seconds nationwide



POWERFUL

Move entire channels to other locations or outputs when needed

Generali cautions, though, that there are some false claims in the marketplace.

"You'll be told, 'My company makes software and it runs in the cloud for you.' But what they're doing is hosting a Windows computer in the cloud that you access remotely. This is not a cloud-optimized solution, this is still Windows."

OP-EX, NOT CAP-EX

Note that adopting a cloud approach requires a different way of thinking about spending. This is now an operating expenditure, not a capital expenditure.

"You don't have to ask for a million dollars' worth of servers, SQL, storage space or a rack room. A browser is all you need; you can run it on a Mac, on a PC, on your tablet. And the flexibility of metered service is appealing to content creators. You can go on a metered service right now, within minutes, in just the time it takes to put a few hours of logs together, and then you're on the internet.

"So instead of buying a big machine or set of machines that you'll put on the balance sheet and depreciate, which is not going to impact your EBITDA, now you're going to have monthly fees, your cloud costs, bandwidth and software licenses. These costs have to be integrated into the way the station works," Generali says.

That raises further questions and possibilities: "Do you now need a different footprint on real estate? Do you have different staffing needs? It's a profound change. You can't go to the cloud just for the sake of going cloud. It's not as simple as, 'Should you buy an Exchange server for email or should you put the staff on Office 365?' The cloud is a means to an end."

But the benefits are real. Most important, Generali adds, the cloud delivers 99.99% up time.

"This really is a safe way to achieve better quality and more flexibility in workflows," he said.

Thousands of web stations today use cloud playout, Generali says.

"But if there's one thing you have to remember, it's the promise of the cloud. When you operate from the cloud, you have the benefits of no station software to update, no hardware to update, no equipment to maintain, no real estate to dedicate to technology."

LEARN MORE

Information about RCS products is available at rcsworks.com. The company also maintains a substantial library of resources under its [Support tab](#) and a series of [helpful videos on Facebook](#).

HOW TO MAKE A GREAT RADIO CLOUD



MUSIC SCHEDULING
GSelector



SPOTS SCHEDULING
AQUIRA



AUTOMATION PLOUT
ZETTA



INDIVIDUAL AD INSERTION



STREAMING
REVMA