Strategies in Survivable Voice Networks

Organizations today seek reliability, simplicity, and cost efficiency. When considering deployment of solutions for disaster recovery/survivability, one must examine the degree of functionality desired, along with the infrastructure, its potential, as well as its inherent limitations. See many of the ways businesses are implementing measures to enable maximum "uptime" and how cloud based systems are similar (and different from premise based solutions. Read more about VoIP for Business

ITEM/CONSIDERATION	HOSTED SYSTEMS	PREMISE SYSTEMS
Server Redundancy	Comtel's hosted VoIP service is resident in a redundant datacenter, so these capabilities are effectively "built-in".	Some premise systems offer drive and power supply redundancy, but newer products do not offer CPU redundancy. Depending on the solution, cost-options are available.
Server Power	This is a non-issue since our servers are collocated in our datacenter, and one's subscription costs are all-inclusive of infrastructural design and related expense. These systems are installed on dual power grids, thus highly protected.	A consideration in premise based systems. Some systems will provide the option for power supply back up, one can invest in battery backup, and certainly power used by servers are an added expense.
Circuit Card Failure	Circuit cards are effectively not an element of real concern in a case where our solution is more of a soft, or "virtual" deployment.	With "digital" PBX systems, they indeed use printed circuit cards for trunks, phones, etc. When one goes down, all channels/ports tied to the card are "down".
Voice Mail System Operation	Voice mail and unified messaging are inherent capabilities, built in to our redundant platform. Should a client experience any form of outage, our system will continue answering calls, taking messages, and depositing voice mails into one's email Inbox if desired.	Voice mail and unified messaging are either on standalone servers, or the software is built in to the phone system server. In both cases, a system failure, lost connection between servers results in an inability to answer calls, take messages.
Digital Telephones	The nature of a hosted VoIP system is that it uses industry standard SIP telephone devices. Digital phones are proprietary to specific manufacturers, and do not operate on our platform.	Digital phones connect using circuit cards, and are subject to the phone system, the card, and the phone being operational. A failure of any of these elements results in a non-working phone.

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VoIP Telephones	VoIP telephones can experience issues, and if one is faulty, it would require repair or replacement. Calls would continue to be answered by one's voice mail, and the user has the option of either having calls go to a personal cell or smartphone, or, the user may "hot desk" to another working phone and get their calls.	VoIP telephones in a premise system can likewise experience issues. Similar options are available in this scenario, but it is relatively uncommon for premise systems to allow a hot desk. There are some systems that allow this form of mobility, but it is the exception, as opposed to the rule.
Analog Telephones	Analog phones in a hosted world are actually converted to SIP in our system so normal forwarding options exist if a unit is faulty.	Analog phones tie to circuit cards, or special modules when connected to premise systems. These are a bit more susceptible to failure given this factor.
Outside Trunk Lines (POTs)	Hosted systems do not utilize analog POTs lines. Our clients tend to reserve their use for fax machines, modems, and such.	Premise systems typically have at least some analog trunks. These will live off of printed circuit cards again, in most cases, so they are subject to the same pitfalls as noted with digital and analog telephones.
PRI T1 Circuits	We do not require PRI T1s, as the signaling provided by these circuits is built in to our platform.	PRI circuits use circuit cards. When a unit fails, calls to the trunks associated, and/or to direct extensions (DID's) cease to operate. Many carriers can "forward" calls during an outage, to a designated number, or in some cases, to several numbers. This is typically a manual operation.
SIP Circuits	Hosted service uses SIP by its very nature. Connections work off of dedicated T1s or broadband. SIP devices may plug in ANYWHERE there is an Internet or MPLS connection. The loss of the local connection to one's business does not result in calls lost as SIP services may be easily managed in a geo-diverse network very seamlessly. In fact, calls continue to be answered, and may be sent to one's personal device, or simply answered by auto attendant/voice mail.	SIP circuits in a standalone system operate similarly to a PRI. In a multiple site network, calls may be more elegantly moved (i.e. a lost connection at location A allows for that traffic to be sent to Location B). This resilient operation requires software, licensing, and professional programming, but it can be an excellent means for maintaining service. It is more desirable than use of PRI, but it comes at a significant cost in most cases where implemented.

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Broadband/Dedicated Internet	Broadband/Dedicated T1 services do have issues from time to time. In such cases, like the other scenarios, your hosted system stays "up", and you have flexibility in terms of call handling. Some clients opt for back up circuits with diverse carriers so that if one circuit fails, the backup service provides access.	This traditionally has no relevance in a premise world unless a client has SIP trunks being delivered over a broadband connection. In such a case, the same back up scenarios are possible.
Point to point Connections in multiple site network	In a multi-site network, we do not require a point to point (or MPLS) connection between sites. Each location is capable of operating on its own (assuming it has a carrier network connection).	In cases where one is networking multiple PBX systems, the failure of a connection between two systems would result in a loss of such traffic. If multiple sites share services like voice mail, ACD, and other applications, then the affected locations and users would lose all such capabilities during the outage.
Internal Cabling (to desktop)	Cable failure does not occur often, but if it does, the phone connection is lost. In VoIP, I can plug my phone into any other live network connection and restore my service, or, answer my calls on cell/smartphone.	Cabling is pretty important in this case unless it is a VoIP telephone. If it is a digital telephone, then it would require some "service" work (reprogramming) of other live connections, possible relo of units.
Data Switches	Data switches provide the connection to VoIP telephones. If one fails, then the phone connection is lost. One has the same failover capabilities as noted above. One could potentially plug into a port on a switch that was still operational.	Data switches with VoIP phones are identical to hosted. With digital phones, this is a non-issue.
General Communications-Multi site	Hosted allows for better integration, the ability to "move" traffic on the fly, enable locations to serve as "back up" for other locations, and make use of time of day, special event, site outages to be managed with much greater effectiveness.	Premise systems, to duplicate the type of survivability in hosted systems, require substantial investment in servers (and power), core software, networking, special IP user licensing, and typically, dedicated connections between sites, with the use of SIP trunks in order to bring desired functionality.
Summary	Hosted Systems provide incredible flexibility, integrating features, as well as inherent survivability, administrative functions, reduced equipment and power, and ongoing support.	Premise systems are great, there are more parts (hence potential for outages) and outside voice lines, power, support, and survivability functions can all cost a great deal.