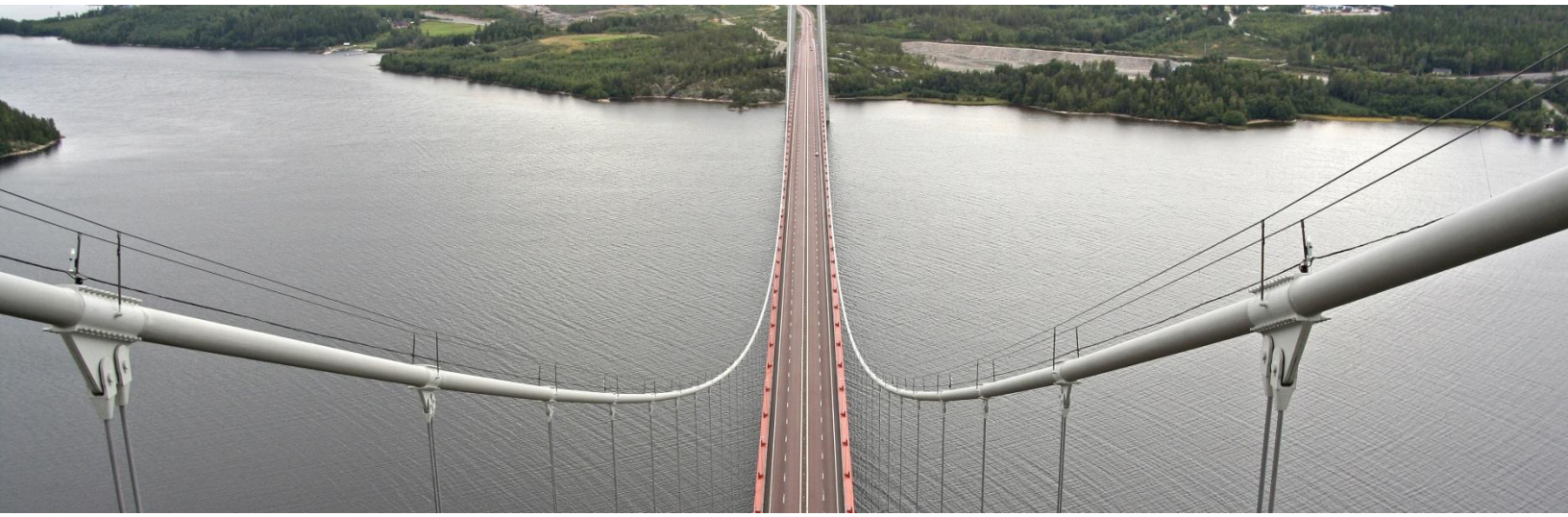
HIGH AVAILABILITY

In Bright Pattern's Cloud Contact Center Solution



Contact centers are mission-critical systems.

Customers are first class citizens of any business. The communication with them is an opportunity for companies to put their best foot forward. Consequently, any issue during the communication may lead to customer dissatisfaction with the service, or even with the business as a whole.

Contact center systems help companies manage high volumes of customer communication. Any interruption or degradation of service in their operation has multiplied impact.

This is why high availability (minimized service unavailability or downtime) and fault tolerance (continued availability as well as continuation of service when some parts of the system fail) are of utmost importance in contact center systems design and operation. They are even more important for cloud-based contact center software systems.

N+1 REDUNDANT SOFTWARE PLATFORM

ServicePattern comprises software components running on multiple servers. The components communicate with each other, forming a logical cluster.

All components are provisioned to be present in more than one instance.

To service a request, a component is selected in a round-robin fashion. This ensures that there are no standby components, as all components perform work continuously and there are no surprises when services are switched from one to another.

HARDWARE REDUNDANCY

A ServicePattern cluster has multiple servers for both scale and redundancy.

Each of the servers comprising a cluster features dual power supplies, dual LAN and RAID-protected storage.

Each of the LAN ports is connected to a separate switch. Each ISP provider is connected to a separate router.

DISASTER RECOVERY

We have datacenters in Santa Clara and Dallas. Both feature running copies of our software. Santa Clara is synchronizing all data changes to Dallas.

Dallas datacenter is always ready to pick up operation in case of a disaster in Santa Clara.

The system uses database slave replication capabilities to pass up-to-the-minute customer information to DR locations at real-time. At the event of a disaster in the primary datacenter, operations personnel upgrade backup instances to primary masters. The communications is transitioned by fast DNS update.

DATA PROTECTION

We use multi-level data protection: from RAID, to synchronized copies to dual-level backups.

RAID allows us to survive single HDD failures without need to re-sync or restore backup.

Databases, used for high performance data storage, configuration storage and reports are deployed in master/slave replica sets – redundant groups of servers with on-the-fly switchover.

Recent backups are kept onsite for fast restoration; all backups are sent off-site for long-term storage.

ROLLING MAINTENANCE AND UPGRADES

In 24/7 operation, taking the system down for maintenance or upgrade is practically impossible.

This is why we implemented soft maintenance shutdowns and introductions into service of system components.

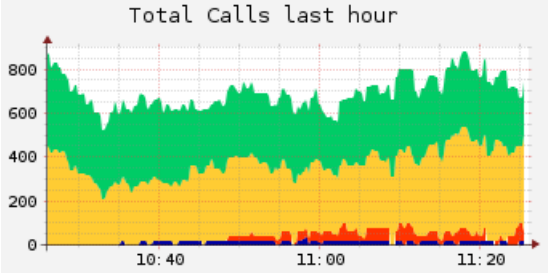
The software components or whole servers can be taken out of service, in which case they stop receiving new transactions and wait until old transactions end and then shut down.

New software components and whole servers can also be introduced into the system on the fly.

MONITORING AND ALERTS

ServicePattern software platform provides SNMP counters for the operations personnel to assess the levels of system resource use and alert when these levels are exceed and require additional capacity to be brought in.

The alerts generated by monitoring software are propagates to our on-duty operations personnel and escalated down the escalation chain automatically in case of delayed response.



SECURITY

The internet facing servers are specifically penetration-tested and hardened with each release, for example the system can work behind SIP session border controllers, but it does not require them. All communication and sensitive data is encrypted.

We employ packet filtering in conjunction with intrusion detection systems (IDS).

CARRIER DIVERSITY

Each cluster is connected to multiple tier-1 ISPs. We maintain multiple SIP trunks with a number of phone carriers. We also utilize SMS and e-mail accounts from multiple providers.

DATA CENTER AVAILABILITY

Both our datacenter locations feature reliable power, from dual power rails into the cages, to UPS arrays, to multiple diesel power generators.

The communication cable feeds into buildings are also redundant.

Both our datacenters are SAS 70-compliant.

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