

4/7/2021 -

Availability

Nines - 99% availability (2 nines), gold standard "five nines"

Availability %	Downtime per year ^[note 1]	Downtime per month	Downtime per week	Downtime per day
55.555555% ("nine fives")	162.33 days	13.53 days	74.92 hours	10.67 hours
90% ("one nine")	36.53 days	73.05 hours	16.80 hours	2.40 hours
95% ("one and a half nines")	18.26 days	36.53 hours	8.40 hours	1.20 hours
97%	10.96 days	21.92 hours	5.04 hours	43.20 minutes
98%	7.31 days	14.61 hours	3.36 hours	28.80 minutes
99% ("two nines")	3.65 days	7.31 hours	1.68 hours	14.40 minutes
99.5% ("two and a half nines")	1.83 days	3.65 hours	50.40 minutes	7.20 minutes
99.8%	17.53 hours	87.66 minutes	20.16 minutes	2.88 minutes
99.9% ("three nines")	8.77 hours	43.83 minutes	10.08 minutes	1.44 minutes
99.95% ("three and a half nines")	4.38 hours	21.92 minutes	5.04 minutes	43.20 seconds
99.99% ("four nines")	52.60 minutes	4.38 minutes	1.01 minutes	8.64 seconds
99.995% ("four and a half nines")	26.30 minutes	2.19 minutes	30.24 seconds	4.32 seconds
99.999% ("five nines")	5.26 minutes	26.30 seconds	6.05 seconds	864.00 milliseconds
99.9999% ("six nines")	31.56 seconds	2.63 seconds	604.80 milliseconds	86.40 milliseconds
99.99999% ("seven nines")	3.16 seconds	262.98 milliseconds	60.48 milliseconds	8.64 milliseconds
99.999999% ("eight nines")	315.58 milliseconds	26.30 milliseconds	6.05 milliseconds	864.00 microseconds
99.9999999% ("nine nines")	31.56 milliseconds	2.63 milliseconds	604.80 microseconds	86.40 microseconds

SLA/SLO - Service Level Agreement / Service Level Objective

6 Key Terms



| Availability

The odds of a particular server or service being up and running at any point in time, usually measured in percentages. A server that has 99% availability will be operational 99% of the time (this would be described as having two **nines** of availability).

| High Availability

Used to describe systems that have particularly high levels of availability, typically 5 nines or more; sometimes abbreviated "HA".

| Nines

Typically refers to percentages of uptime. For example, 5 nines of availability means an uptime of 99.999% of the time. Below are the downtimes expected per year depending on those 9s:

- 99% (two 9s): 87.7 hours
- 99.9% (three 9s): 8.8 hours
- 99.99%: 52.6 minutes
- 99.999%: 5.3 minutes

| Redundancy

The process of replicating parts of a system in an effort to make it more reliable.

| SLA

Short for "service-level agreement", an SLA is a collection of guarantees given to a customer by a service provider. SLAs typically make guarantees on a system's availability, amongst other things. SLAs are made up of one or multiple SLOs.

| SLO

Short for "service-level objective", an SLO is a guarantee given to a customer by a service provider. SLOs typically make guarantees on a system's availability, amongst other things. SLOs constitute an SLA.