

The load statement

“It will cope” is not a method. Rate × size × the worst honest minute is — and each of the three inputs is measured rather than guessed, then debited against a headroom figure that already exists in writing. Networks do not fail at their average; they fail at their worst minute.

RECORD Five measured inputs, then the arithmetic they produce

- 01 Points per class.** Analogues, discretes and strings counted separately for the proposed flow, because change behaviour differs by two orders of magnitude between placid temperatures and chattering discretes.
- 02 Measured change rate per point class.** From a representative day, not a datasheet and not a guess. For report-by-exception flows this is the rate; for polled flows it is samples per second per point.
- 03 Bytes per message on the wire.** Payload plus protocol overhead, from a packet capture. Overhead differs sharply by protocol theory, and measured captures beat datasheet arithmetic every time.
- 04 Peaking factor, with its source named.** The worst honest minute over the average — shift-change refreshes, batch transitions, alarm floods — obtained from flood tests and batch edges rather than assumed.
- 05 Buffer drain configuration.** What each edge buffer does on reconnect, *on top of* live traffic. The drain rate is a configuration choice this arithmetic must set, not discover during the outage.
- 06 The two results.** Steady rate = points × change rate × bytes. Worst minute = steady × peaking, plus the configured drain. Both recomputable from the rows above.

ASK The numbers that turn arithmetic into a social contract

- **What is the site’s written headroom policy?**
Headroom is policy, not leftovers. Every new flow’s load statement is debited against a figure that is written down — and a link at 80% of policy headroom is full, whatever its utilisation graph says.
- **What ceiling has the automation owner set inside control zones?**
Obtained *before* design, not discovered at commissioning. The load statement is presented against it, and the after-state — controller scan margins, segment utilisation, worst observed minute — is measured and filed where the next project will find it.
- **What is the latency budget, stage by stage?**
Sampling delay, device processing, per-hop transit, broker or server processing, storage write, consumer refresh. Budgets are additive; the commonest discovery is that the network was innocent and the seconds live in scan intervals and refresh timers at the two ends.
- **Which stage blows the budget?**
The right question once the stages are written down. “The dashboard feels slow” is not a finding.

THE BOUNDARY THIS CARD CARRIES

This card supplies no headroom fraction, no peaking factor and no bytes-per-message figure — those come from your process, your network and your own captures, and a number borrowed from another site is not evidence about yours. Network design, segmentation, and any change to control-zone traffic are engineering activities under site change control and the automation owner’s authority.