



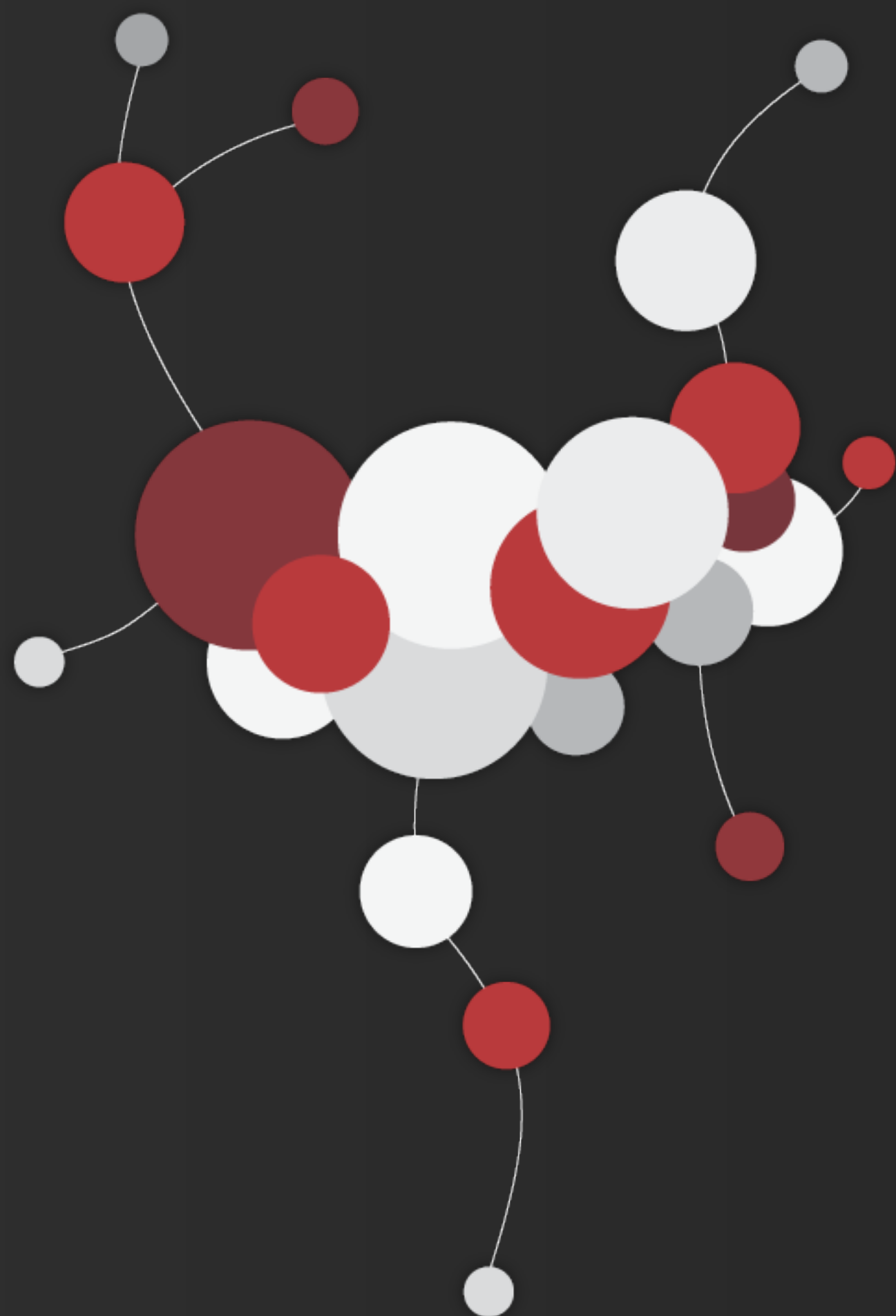
spearhead
systems



spearhead
systems

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Innovative technologies. Impeccable services.



Check_MK High Availability

Check_MK Conference #4 2.-4.5.2018



Check_MK is important



Check_MK is important

insight and visibility



Check_MK is important

insight and visibility

fault management



Check_MK is important

insight and visibility

fault management
business continuity

terminology



terminology

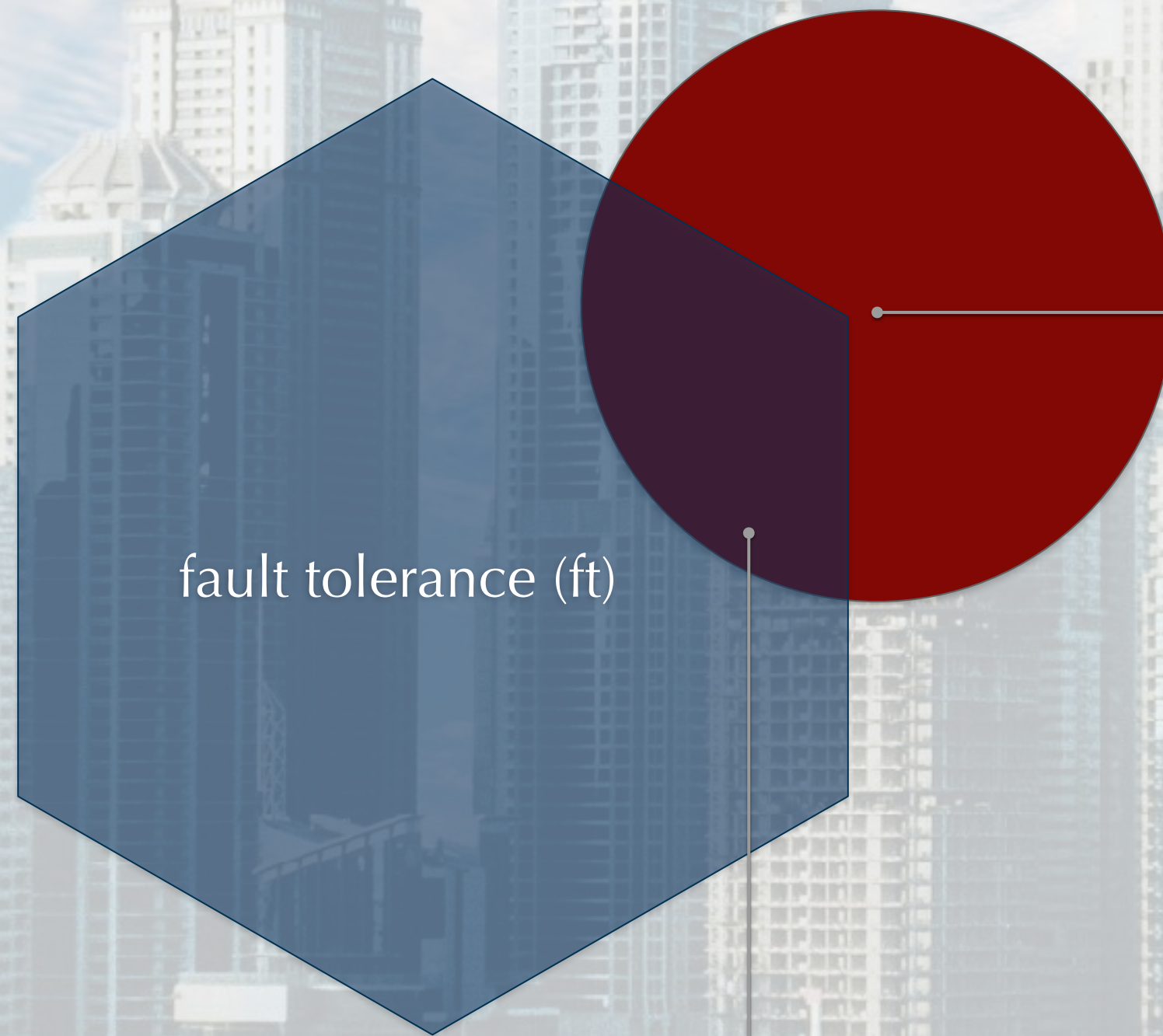
business continuity

terminology

business continuity

fault tolerance (ft)

handle hw/sw fault(s)



terminology

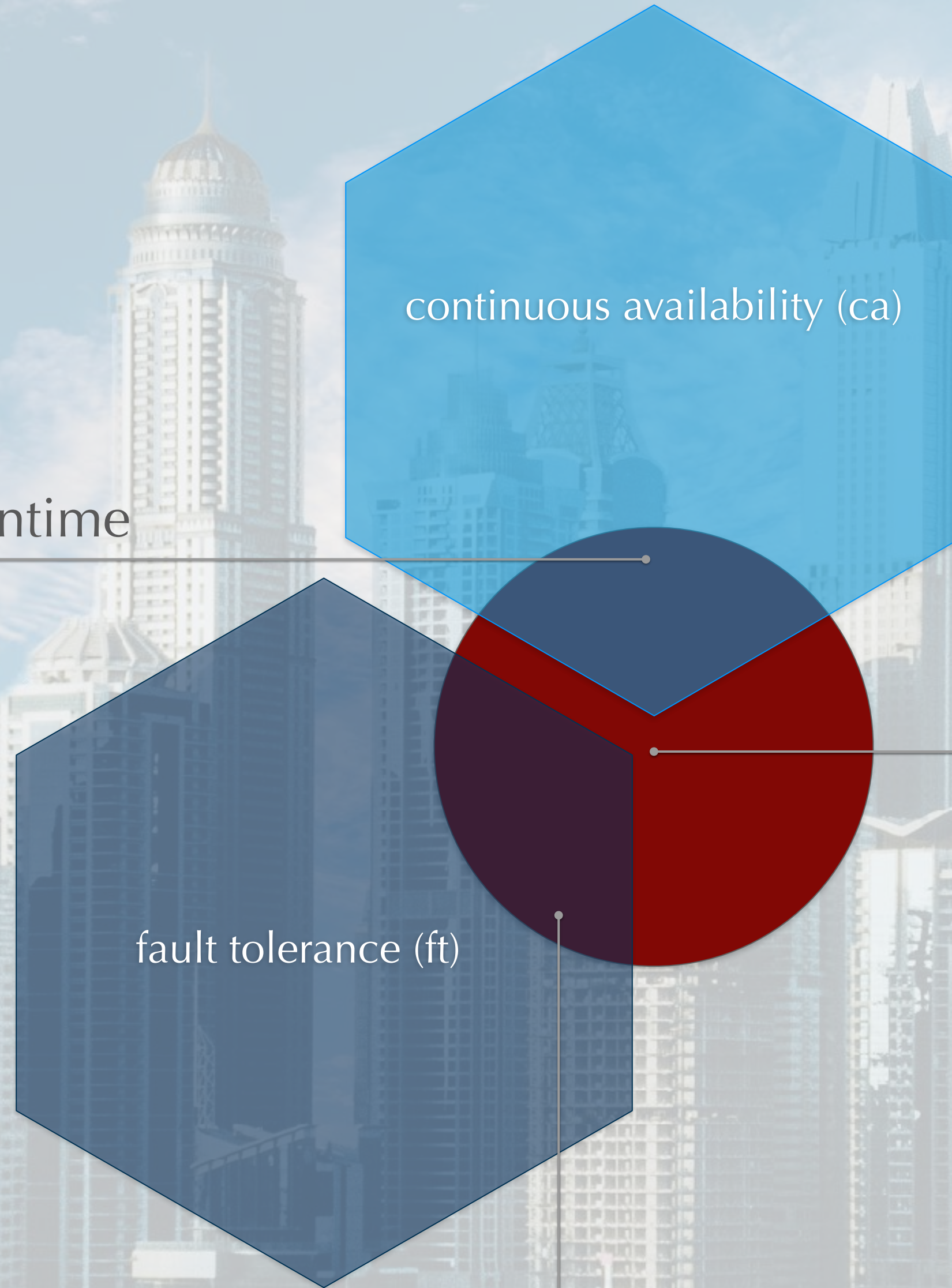
no downtime

continuous availability (ca)

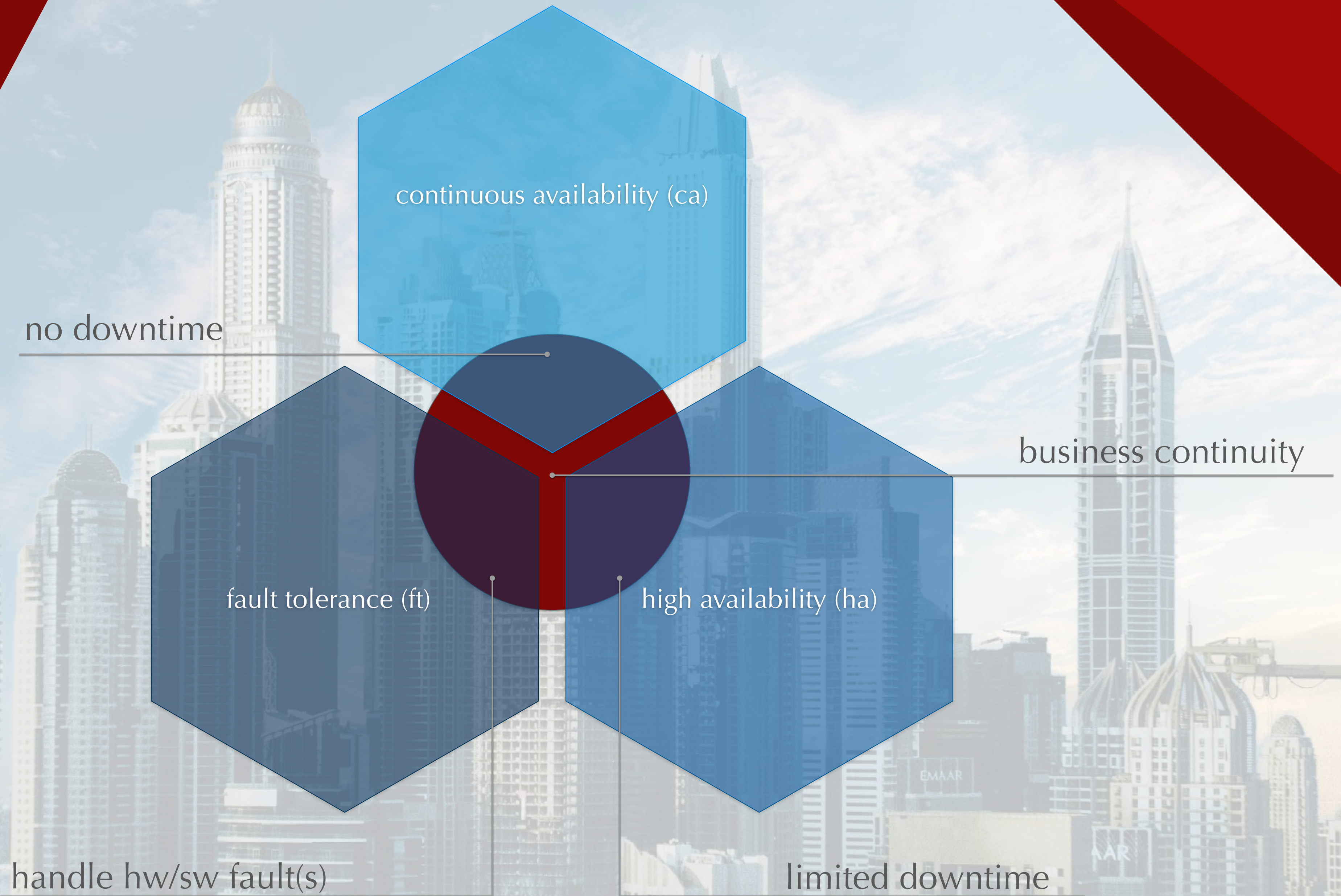
fault tolerance (ft)

business continuity

handle hw/sw fault(s)



terminology



Availability %	Downtime per year	Downtime per month	Downtime per week	Downtime per day
90% ("one nine")	36.5 days	72 hours	16.8 hours	2.4 hours
95% ("one and a half nines")	18.25 days	36 hours	8.4 hours	1.2 hours
97 %	10.96 days	21.6 hours	5.04 hours	43.2 minutes
98 %	7.30 days	14.4 hours	3.36 hours	28.8 minutes
99% ("two nines")	3.65 days	7.20 hours	1.68 hours	14.4 minutes
99.5% ("two and a half nines")	1.83 days	3.60 hours	50.4 minutes	7.2 minutes
99,8 %	17.52 hours	86.23 minutes	20.16 minutes	2.88 minutes
99.9% ("three nines")	8.76 hours	43.8 minutes	10.1 minutes	1.44 minutes
99.95% ("three and a half nines")	4.38 hours	21.56 minutes	5.04 minutes	43.2 seconds
99.99% ("four nines")	52.56 minutes	4.38 minutes	1.01 minutes	8.64 seconds
99.995% ("four and a half nines")	26.28 minutes	2.16 minutes	30.24 seconds	4.32 seconds
99.999% ("five nines")	5.26 minutes	25.9 seconds	6.05 seconds	864.3 milliseconds
99.9999% ("six nines")	31.5 seconds	2.59 seconds	604.8 milliseconds	86.4 milliseconds
99.99999% ("seven nines")	3.15 seconds	262.97 milliseconds	60.48 milliseconds	8.64 milliseconds
99.999999% ("eight nines")	315.569 milliseconds	26.297 milliseconds	6.048 milliseconds	0.864 milliseconds
99.9999999% ("nine nines")	31.5569 milliseconds	2.6297 milliseconds	0.6048 milliseconds	0.0864 milliseconds

ha options



ha options

Virtualisation



ha options

Virtualisation

DYI Clusters

ha options

Check_MK
Appliance

Virtualisation

DYI Clusters

ha options

Virtualisation

Check_MK
Appliance

DYI Clusters

Backup /
Restore

ha options





virtualisation

The left side of the slide features two overlapping red geometric shapes. The top shape is a dark red triangle pointing towards the top-left corner. The bottom shape is a lighter red quadrilateral that overlaps the bottom of the triangle, extending towards the bottom-left corner.

virtualisation

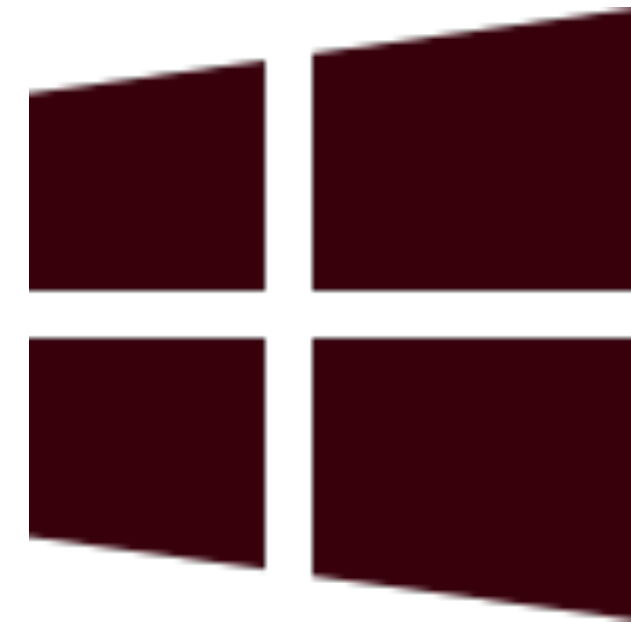
quick and easy



virtualisation

no special config

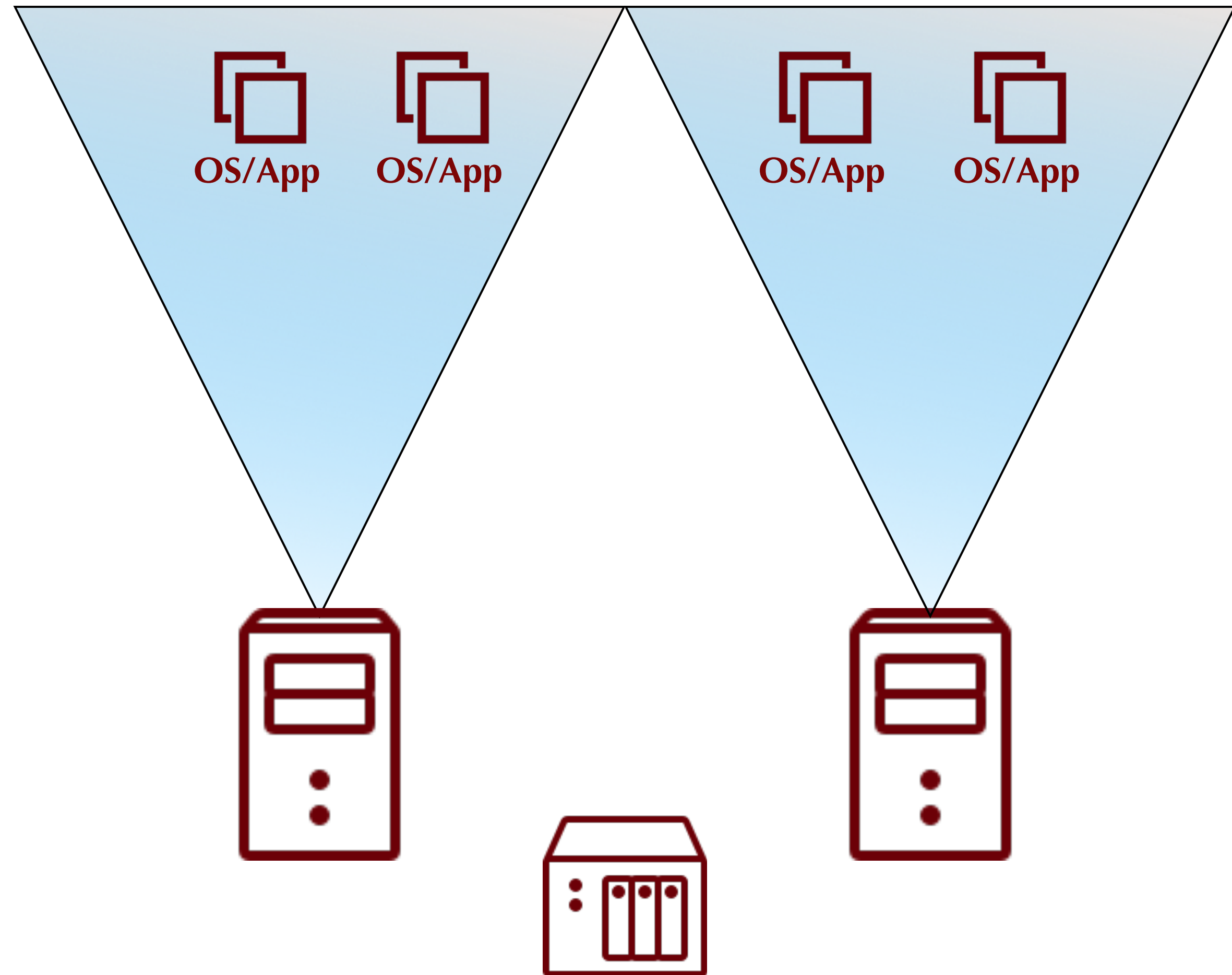
virtualisation



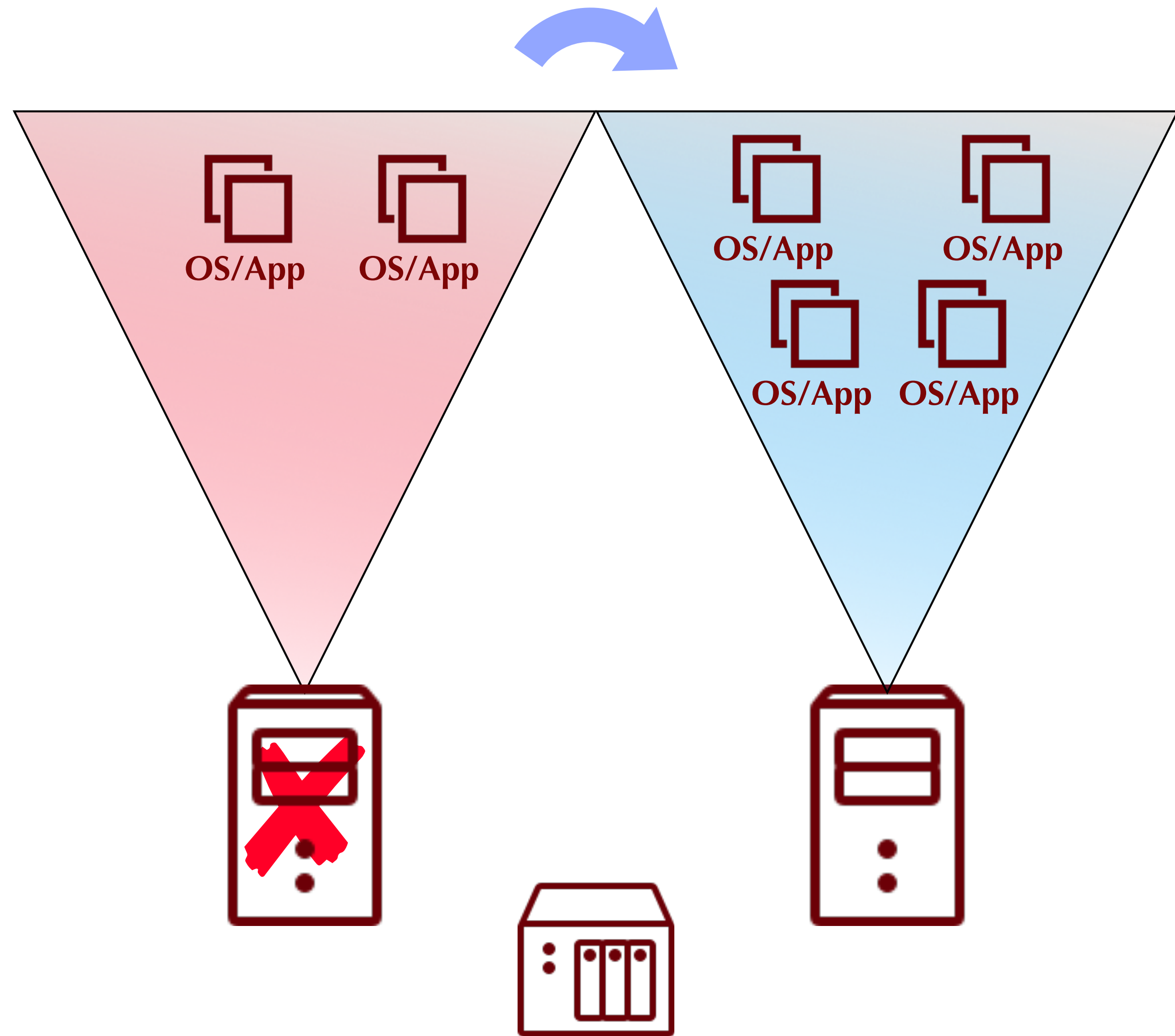


virtualisation

virtualisation



virtualisation



The image features a decorative graphic in the top-left corner consisting of two overlapping red shapes. The first is a large, dark red triangle pointing towards the bottom-right. The second is a slightly lighter red triangle that overlaps the first, also pointing towards the bottom-right but with a different orientation, creating a layered effect.

dyi clusters

requires specialised know-how

dyi clusters



specialised tools

dyi clusters

specialised procedures

dyi clusters

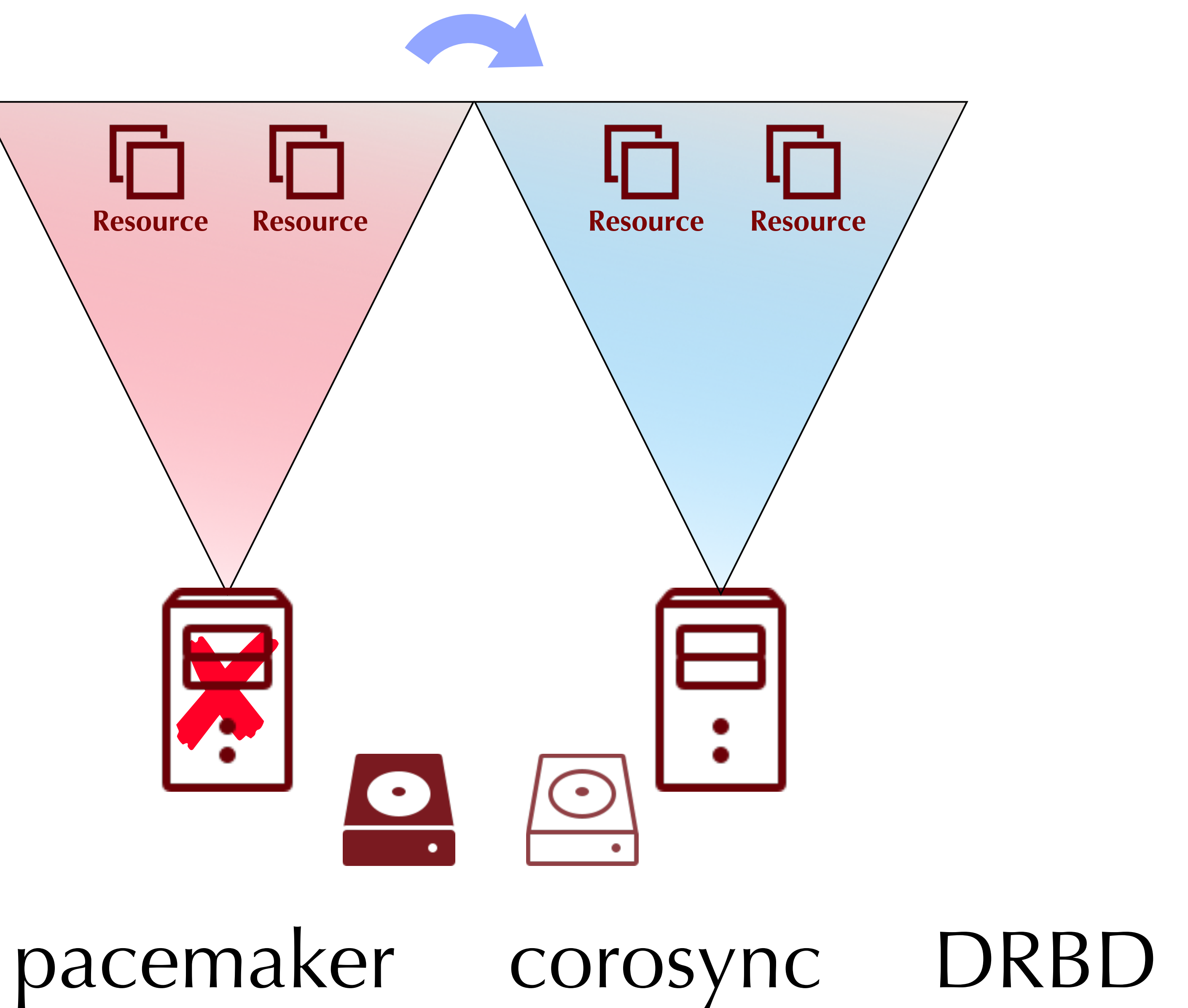


dyi clusters

pacemaker

corosync

DRBD



resource

IP

resource

app

resource

ext4

DRBD

Primary

Secondary

Resource mgr

Pacemaker

Messaging

CoroSync / Heartbeat



dyi clusters


pacemaker

corosync

DRBD



backup & restore



seriously?

backup & restore

backup & restore

yes!




SLA of 99,95%

backup & restore



4.38 hours downtime per year

backup & restore



RTO - restore time (allowed downtime)

backup & restore



RPO - how much data can I lose?

backup & restore



backup & restore

other solutions



other solutions

can you *handle* a relaxed HA level?

An aerial view of a city skyline, featuring the CN Tower prominently in the center. The image is overlaid with a semi-transparent red diagonal band on the left side. The text "how much do you want to tune and tweak?" is centered over the cityscape.

how much do you want to tune and tweak?

other solutions

other solutions

zfs



other solutions

zfs

rsync

other solutions

zfs

rsync

DRBD

other solutions

zfs

rsync

DRBD

Containers

check_mk appliance



check_mk appliance

completely managed solution
2 node active/passive cluster

check_mk appliance

completely managed solution
2 node active/passive cluster

easy to use GUI standardised
Pacemaker DRBD CoroSsync

closing thoughts



An aerial photograph of a city, likely Bucharest, showing a dense urban landscape with various buildings, including a large, ornate, light-colored building with a blue dome. A large, semi-transparent red geometric shape, resembling a stylized arrow or a large 'A', is overlaid on the left side of the image. The text 'whats the best approach?' is centered in the middle of the image, and 'closing thoughts' is in the bottom left corner.

whats the best approach?

closing thoughts

An aerial photograph of a city, likely Bucharest, showing a dense urban landscape with various buildings, including a large, ornate classical building in the foreground. A large red geometric shape, resembling a stylized arrow or a series of overlapping triangles, is positioned on the left side of the image, pointing towards the center. The text "simple is almost always better" is overlaid on the right side of the image, and "closing thoughts" is overlaid on the red shape on the left.

simple is almost always better

closing thoughts

An aerial photograph of a city, likely Bucharest, showing a dense urban landscape with various buildings, including a large, ornate, light-colored building with a blue dome. A large red arrow graphic points from the left side of the image towards the right, partially obscuring the city view. The text "what is your acceptable HA level?" is overlaid on the right side of the image.

what is your acceptable HA level?

closing thoughts

An aerial photograph of a city, likely Bucharest, showing a dense urban landscape with various buildings, including a large, ornate, light-colored building with a blue dome. A large red arrow graphic points from the left side of the image towards the right, partially obscuring the city view. The text "network architecture is important" is overlaid on the right side of the image, and "closing thoughts" is overlaid on the red arrow area.

network architecture is important

closing thoughts

closing thoughts



Thank You



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