Innovative technologies. Impeccable services.

Marius Pana | @mariuspana
Check_MK High Availability

Check_MK Conference #4 2.-4.5.2018
IT monitoring is important - insight and visibility into the infrastructure and applications - we instantly feel it when the systems are down - we know this when we no longer have monitoring data available - and because IT monitoring is important, HA has become a common practice - in some situations it is business critical (no visibility into customers systems considered critical).
Check_MK is important
Check_MK is important

insight and visibility
Check_MK is important

insight and visibility

fault management
IT monitoring is important - insight and visibility into the infrastructure and applications - we instantly feel it when the systems are down - we know this when we no longer have monitoring data available - and because IT monitoring is important, HA has become a common practice - in some situations it is business critical (no visibility into customers systems considered critical)
terminology
terminology

fault tolerance (ft)

handle hw/sw fault(s)

business continuity
terminology

- continuous availability (ca)
- no downtime
- fault tolerance (ft)
- handle hw/sw fault(s)
- business continuity
Continuous Availability (CA)

- No downtime
- Fault tolerance (FT)
- High availability (HA)
- Handle HW/SW fault(s)
- Limited downtime

Business continuity
<table>
<thead>
<tr>
<th>Availability %</th>
<th>Downtime per year</th>
<th>Downtime per month</th>
<th>Downtime per week</th>
<th>Downtime per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>90% (&quot;one nine&quot;)</td>
<td>36.5 days</td>
<td>72 hours</td>
<td>16.8 hours</td>
<td>2.4 hours</td>
</tr>
<tr>
<td>95% (&quot;one and a half nines&quot;)</td>
<td>18.25 days</td>
<td>36 hours</td>
<td>8.4 hours</td>
<td>1.2 hours</td>
</tr>
<tr>
<td>97%</td>
<td>10.96 days</td>
<td>21.6 hours</td>
<td>5.04 hours</td>
<td>43.2 minutes</td>
</tr>
<tr>
<td>98%</td>
<td>7.30 days</td>
<td>14.4 hours</td>
<td>3.36 hours</td>
<td>28.8 minutes</td>
</tr>
<tr>
<td>99% (&quot;two nines&quot;)</td>
<td>3.65 days</td>
<td>7.20 hours</td>
<td>1.68 hours</td>
<td>14.4 minutes</td>
</tr>
<tr>
<td>99.5% (&quot;two and a half nines&quot;)</td>
<td>1.83 days</td>
<td>3.60 hours</td>
<td>50.4 minutes</td>
<td>7.2 minutes</td>
</tr>
<tr>
<td>99.8%</td>
<td>17.52 hours</td>
<td>86.23 minutes</td>
<td>20.16 minutes</td>
<td>2.88 minutes</td>
</tr>
<tr>
<td>99.9% (&quot;three nines&quot;)</td>
<td>8.76 hours</td>
<td>43.8 minutes</td>
<td>10.1 minutes</td>
<td>1.44 minutes</td>
</tr>
<tr>
<td>99.95% (&quot;three and a half nines&quot;)</td>
<td>4.38 hours</td>
<td>21.56 minutes</td>
<td>5.04 minutes</td>
<td>43.2 seconds</td>
</tr>
<tr>
<td>99.99% (&quot;four nines&quot;)</td>
<td>52.56 minutes</td>
<td>4.38 minutes</td>
<td>1.01 minutes</td>
<td>8.64 seconds</td>
</tr>
<tr>
<td>99.995% (&quot;four and a half nines&quot;)</td>
<td>26.28 minutes</td>
<td>2.16 minutes</td>
<td>30.24 seconds</td>
<td>4.32 seconds</td>
</tr>
<tr>
<td>99.999% (&quot;five nines&quot;)</td>
<td>5.26 minutes</td>
<td>25.9 seconds</td>
<td>6.05 seconds</td>
<td>864.3 milliseconds</td>
</tr>
<tr>
<td>99.9999% (&quot;six nines&quot;)</td>
<td>31.5 seconds</td>
<td>2.59 seconds</td>
<td>604.8 milliseconds</td>
<td>86.4 milliseconds</td>
</tr>
<tr>
<td>99.99999% (&quot;seven nines&quot;)</td>
<td>3.15 seconds</td>
<td>262.97 milliseconds</td>
<td>60.48 milliseconds</td>
<td>8.64 milliseconds</td>
</tr>
<tr>
<td>99.999999% (&quot;eight nines&quot;)</td>
<td>315.569 milliseconds</td>
<td>26.297 milliseconds</td>
<td>6.048 milliseconds</td>
<td>0.864 milliseconds</td>
</tr>
<tr>
<td>99.9999999% (&quot;nine nines&quot;)</td>
<td>31.5569 milliseconds</td>
<td>2.6297 milliseconds</td>
<td>0.6048 milliseconds</td>
<td>0.0864 milliseconds</td>
</tr>
</tbody>
</table>
ha options

- Virtualisation
- Check_MK Appliance
- DIY Clusters
ha options

- Virtualisation
- Check_MK Appliance
- DYI Clusters
- Backup / Restore
ha options

Check_MK Appliance

Backup / Restore

Virtualisation

DYI Clusters

Other Solutions
virtualisation
virtualisation quick and easy
virtualisation

no special config
virtualisation
virtualisation
virtualisation
virtualisation
dyi clusters
requires specialised know-how
specialised tools
specialised procedures
dyi clusters  pacemaker  corosync  DRBD
seriously?
backup & restore

yes!
SLA of 99.95%
4.38 hours downtime per year
RTO - restore time (allowed downtime)
RPO - how much data can I lose?
backup & restore
other solutions
can you *handle* a relaxed HA level?
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
CoroSync
closing thoughts
whats the best approach?
closing thoughts
simple is almost always better
what is your acceptable HA level?
closing thoughts
network architecture is important

closing thoughts
closing thoughts
Thank You