TEXATA 2015

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Why CDETS?

"As a temporary workaround the DEV_STRICT_TYPE_CHECKING define was removed but this needs to be fixed long term"

Applications at risk of contagion in a Software Defined Network

A butterfly effect in a SDN?

"[…] hurricane being influenced by minor perturbations such as the flapping of the wings of a distant butterfly several weeks earlier"

- How fast can a defect be "propagated" ?
- Can a CR / ER be causing an incident?
- Can a workaround be causing a SEV1?
- Can we assign a defect with high risk of contagion to a more Sr. DevOps engineer?

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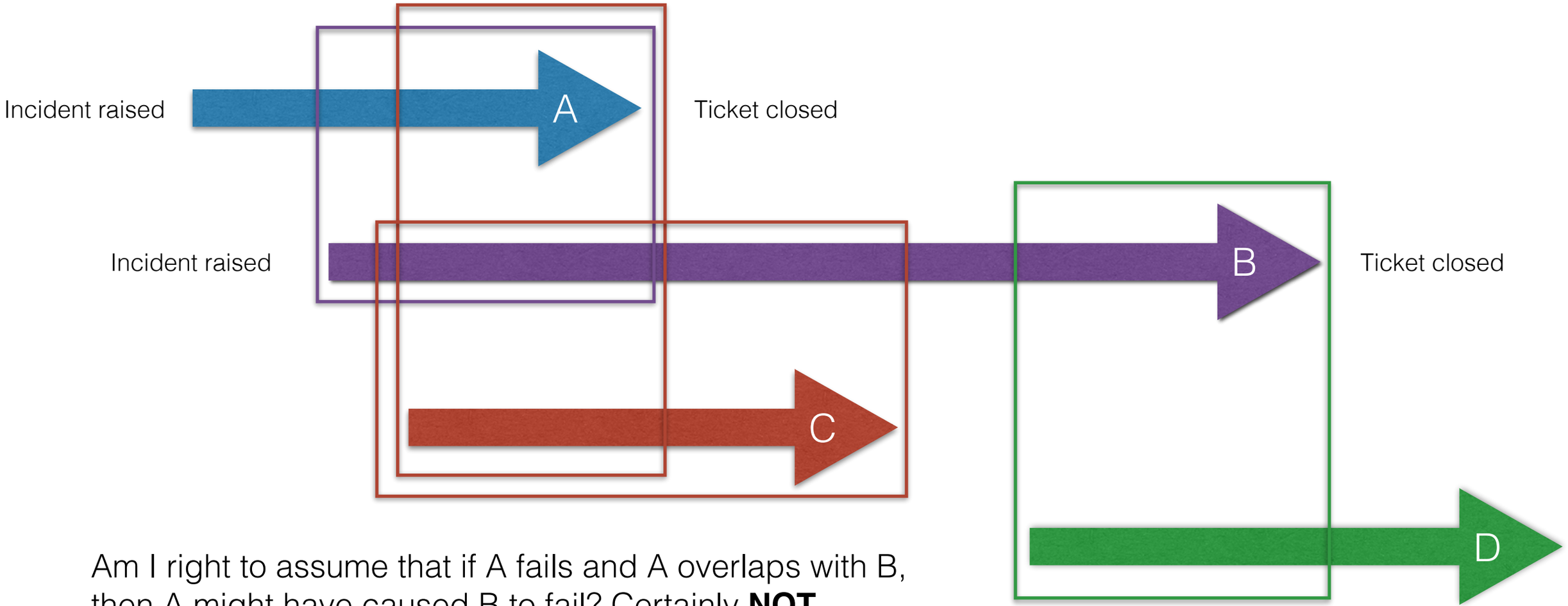
Building a graph of Contagion

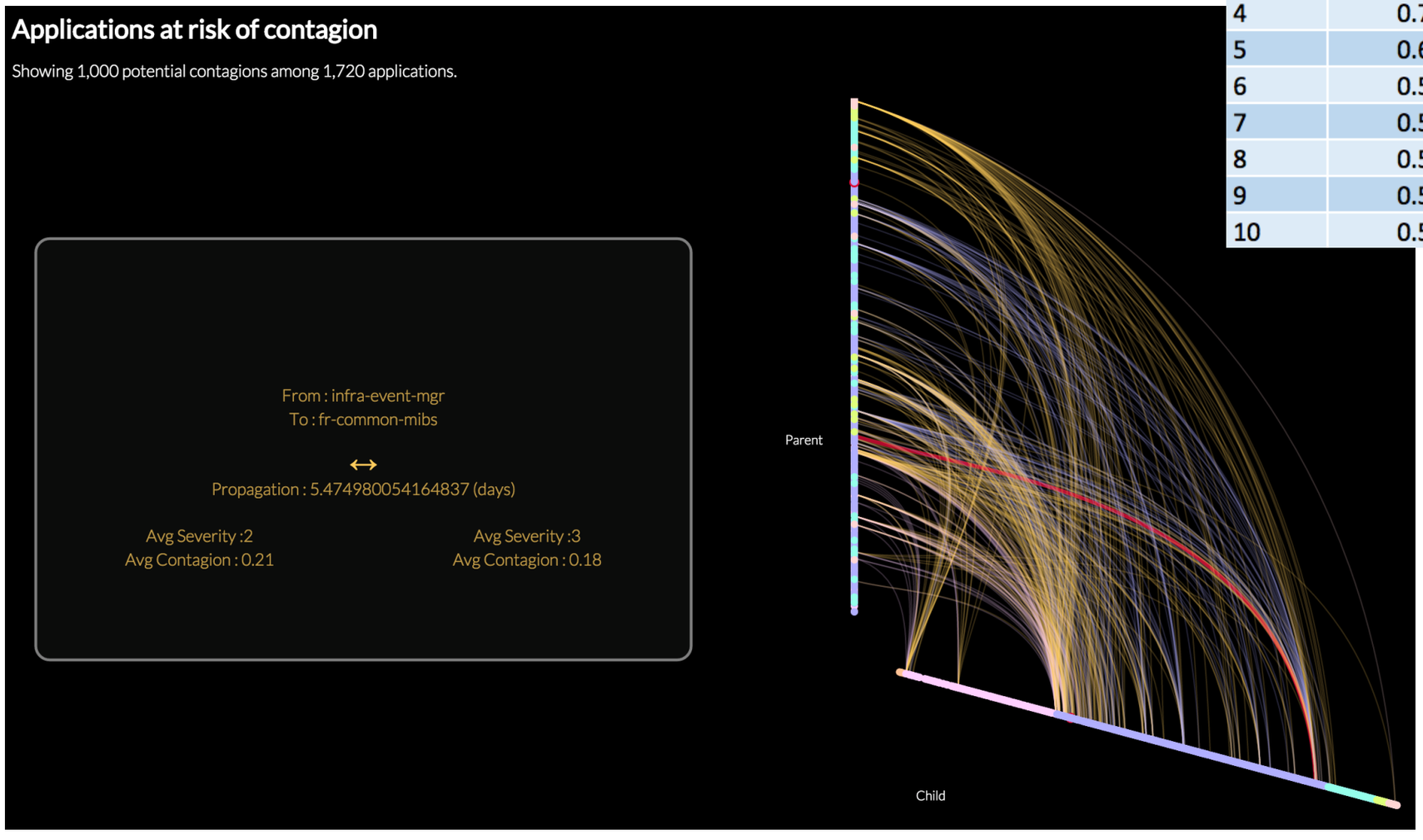


Am I right to assume that if A fails and A overlaps with B, then A might have caused B to fail? Certainly **NOT**

But what if A-B always are observed together? **Big Data**
Edge weight proportional to application co-occurrence

Using a custom PageRank to compute risk of contagion

#	Contagion Risk	Application Name	Average Severity
1	1	asr9k-diags	4.149834983
2	0.947488115	asr9k-prm	3.395241243
3	0.832339731	asr9k-l2vpn	3.536154258
4	0.777280808	asr9k-qos	3.247208122
5	0.636320044	asr9k-ether-ctrl	3.340167046
6	0.558566834	asr9k-ipmcast	3.560042508
7	0.546831661	l2vpn	3.174506829
8	0.543250002	iedge4710	3.261595547
9	0.521347139	asr9k-sc-envmon	3.461254613
10	0.520874251	asr9k-lc-np	3.602916433



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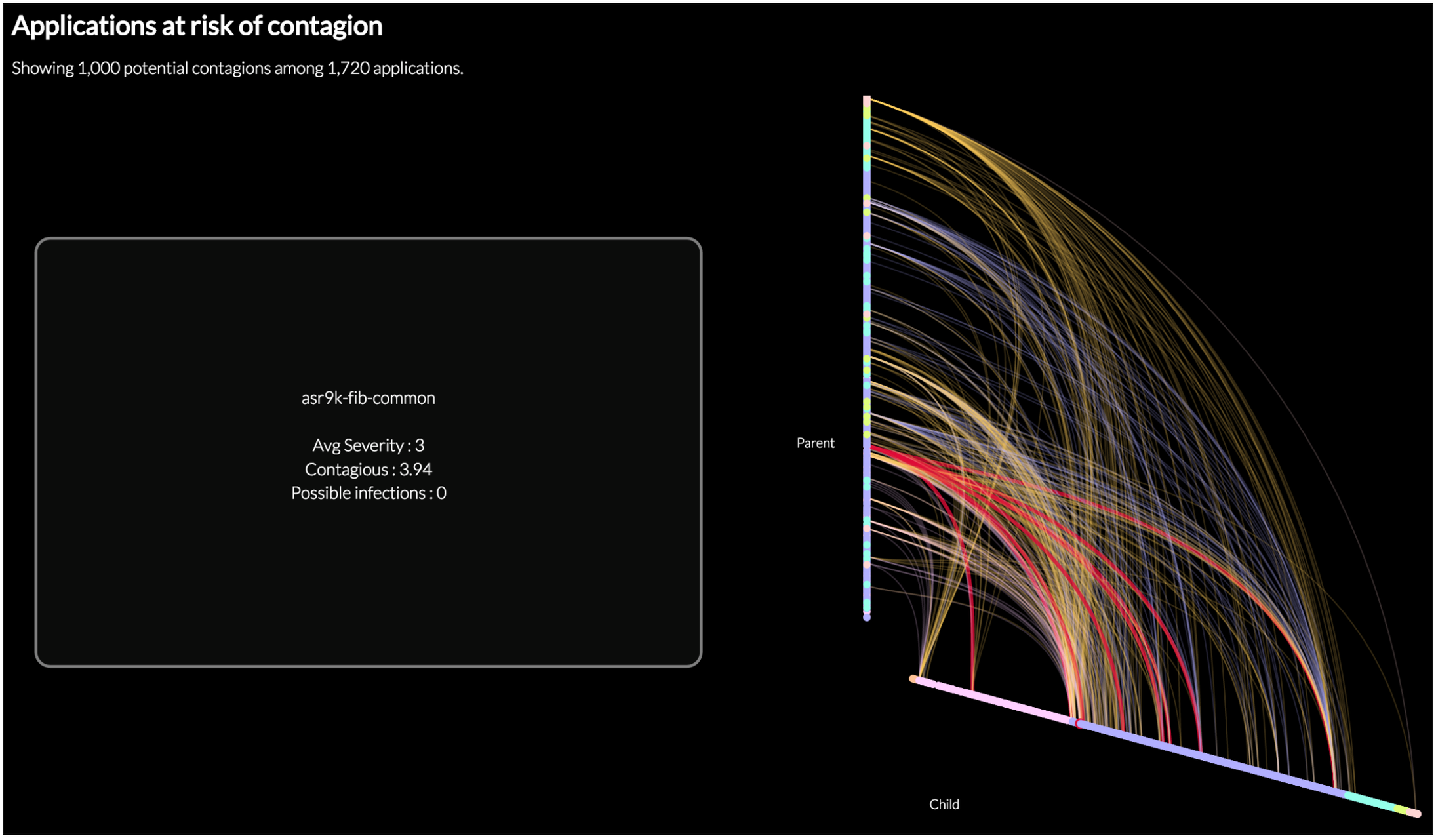
Explore the different contagion scenarios



With a better understanding in SDN contagion

- System defined Severity based on risk of contagion
- Automated incident assignment
  - Reduce L1 operations / costs

- Contagion confinement and application quarantine
  - Tells you if something bad is coming, when, where? And take actions
  - Don’t let things go wrong

Thank you!