Namenode SPOF – HA and Federation namenodes in Hadoop 2x

In Hadoop versions prior to 2.0, the HDFS system comprised a primary and a secondary name node (NN) which managed the metadata (node id and block number) for the blocks of data stored in the file system on the data nodes. The primary NN was a single point of failure because failure of the primary NN necessitated recovery of either the primary NN or the secondaryNN. Versions prior to 2.0 used only 2 NNs. Hadoop v. 2.0 introduced 2 additional configurations: High Availability (HA) and Federated Name Nodes (FNN). HA allowed using two NNs in an active-passive relationship. The two NNs relied on a shared information space using either shared storage (NFS) or the Quorum Journal Manager. FNN introduced the concept of a namespace composed of a NN and dependent data nodes; for example, NN1 managed DN1–3, NN2 managed DN4–6, and NN3 managed DN7–9. HA and FNN are not incompatible, thus it is possible to have, for example, three active NNs and three standby NNs managing three namespaces. Version 3 of Hadoop ([alpha 8/30/16)](https://hadoop.apache.org/docs/r3.0.0-alpha1/) will support more than one standby NNs in an HA configuration. At this time, I have not verified but presume that FNNs are still supported. Thus it should be possible to run three active NNs for three name spaces with two standby NNs for each namespace, thereby using a total of 9 NNs in the cluster