How are the blockSpace thresholds calculated for Element

They are calculated based on the following equations:

1. Total block capacity - (largest node capacity + 3 % of total block capacity) = Cluster error threshold
2. Cluster error threshold / Total block capacity = % at which the system generates the error message
**Additional Information**

Block capacity is obtained by API Call `GetClusterCapacity` under `maxUsedSpace`.

You can consult raw capacity per node type on following KB: [What is the raw block and metadata capacity for SolidFire and H-Series nodes?](#)

**Example on how it is calculated:**

For five SF9605 nodes:

- Total block capacity of five SF9605 nodes (5 x 8,640GB) = 43,200 GB
- Largest node capacity = 8,640GB

Three percent of total block capacity (43,200GB x 0.03) = 1,296 GB

Applying these values to the formulae, the following results are obtained:

1. Total block capacity - (largest node capacity + 3% of total block capacity) = **Cluster error threshold**
2. **Cluster error threshold** / Total block capacity = % at which the system generates the error message

43,200 - (8,640 + 1,296) = **33,264**

33,264 / 43,200 = .77 (or 77%)

Interpret the results of the above example as follows:

- A **BlockClusterFull** error code will appear when the cluster is 77% (33,264 GB) full.
- The system default for generating a warning severity message is 3% below the calculated error severity. In this example, the system would generate a warning severity when the cluster is 74% full.
- If you want to be notified with a warning severity message before the 74% threshold is reached, you can specify the threshold percentage at which you want to see a warning on **Cluster -> Settings -> Cluster Full Settings** field.
- For example, if you want a warning message at 10% below the error severity (77%), then enter 10 in the 'Raise a **warning** alert when _% capacity remains before Helix could not recover' field. A warning severity will then be generated when 67% of the cluster is full.