Octaga Performance Optimization Guide

Geometry:
1. Use IndexedTriangleSet for geometry
2. Avoid double sided surfaces (use solid = TRUE)
3. Always use normalPerVertex = TRUE and colorPerVertex = TRUE (default)
4. Avoid combining per vertex color with animated material transparency
5. Keep the number of shapes low. Merge objects that has the same appearance is part of the same logical group and is located close together. Avoid merging too many unrelated objects as it will hurt culling. Optimal vertex count for a single shape is 10000-65536.
6. If you have a chunk of unoptimized geometry where that parts are not to be animated individually you can wrap it up in a StaticGroup and use displayList = TRUE. Do not make these chunks too large as it will hurt culling.

Grouping:
1. Group together objects that can be considered parts of a logical group and is always located close to each other. Avoid unnecessary groups.
2. Each group should ideally have between 2 and 50 children and the scene graph should be well balanced, meaning that each child of a given group is approximately of the same weight.

Textures:
1. Don't use unnecessary large textures. Remember that it is the resolution that counts not the file size. Merging several textures into one big texture atlas might be a good idea but we have not yet optimized the player for this.

Loading:
1. Use explicit normals and texture coordinates
2. Use unzipped wrl files instead of zipped wrz files
3. Use DDS textures
4. Use a fast disk

Animations:
1. Avoid coordinate interpolators if not needed
2. Set the bounding box of shapes that has animated geometry

Other:
1. DEF/USE as much as possible. It will reduce loading time and memory consumption and, in many cases, improve rendering speed.