## Test Scenarios: NX on Azure virtual Desktop

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| Scenario Number | Scenarios NX CP tool |  |
|  | * 1. Gdat: 15 graphics unit tests that exercise various basic graphics operations of NX without going through NX's UI layer |  |
|  | 1- Graphics window creation     2- Various lighting operations     3- Sectioning along the three axes     4- Multiple viewports     6- markers and text     7- Shading through a CAM operation     8- Line fonts     9- Combined operations (multi-axis section and rotation)    10- Background    11- Multi-view pan/zoom/rotate/section    12- View operations in shaded mode    13- View clipping    14- Rotation of projected plane     * 1. Grace 1:        5 unit tests (A through B)   2. Basic Features      1- Load model     2- Rotation Tests     3- View transformations     4- Zoom operations     5- Display modes     6- Hidden line mode     7- Rotations     8-  ghosted hidden line     9 - Hidden line grayed     10- Hidden line invisible     11- Feature line leak test of hidden line mode     12-  Display of B-rep lines, tessellation lines, hidden lines,  1-10     * 1. Fog Measurements Clipping      1. Zooming with fog effect      2. Measurement annotation      3. Rotation with Measurement Annotation      4. Clipping Plane along X-axis      5. Move Clipping Plane along X-axis      6. Clipping Plane along Y-axis      7. Move Clipping Plane along Y-axis      8. Clipping Plane along Z-axis      9. Move Clipping Plane along Z-axis      10. Clipping Planes Crash Test      11. Clipping Plane with Enable Hatching      12. Tessellation Lines with Hidden Lines Visible      13. Move Clipping Plane with Hidden Lines Visible      14. Tessellation Lines with Hidden Lines Invisible      15. Move Clipping Plane with Hidden Lines Invisible      16. Tessellation Lines with Hidden Lines Ghosted      17. Move Clipping Plane with Hidden Lines Ghosted      18. Clipping Plane with Transparency      19. Move Clipping Plane with Transparency      20. Multiple Clipping Planes with Transparency      21. Move Multiple Clipping Plane with Transparency      22. End Test      * 1. Lighting      1. Introduction      2. Lighting Test      3. Spot Light      4. Spot Light Manipulation      5. Point Light      6. Point Light Manipulation      7. Directional Light      8. Directional Light Manipulation      9. Multiple Spot Lights      10. Multiple Spot Lights with Texture Maps - 1      11. Multiple Spot Lights with Texture Maps - 2      12. Rotation with Texture Maps - 2      13. Multiple Spot Lights with Texture Maps - 3      14. Rotation with Texture Maps - 3      15. Multiple Point Lights      16. Multiple Point Lights with Texture Maps - 1      17. Multiple Point Lights with Texture Maps - 2      18. Rotation with Texture Maps - 2      19. Multiple Point Lights with Texture Maps - 3      20. Rotation with Texture Maps - 3      21. Multiple Directional Lights      22. End Test      * 1. Shadow Bump Environment      1. Introduction      2. Shadow Test      3. Cast Shadows      4. Shadow Opacity Editing      5. Light Cut-off Angle Editing      6. Light Spot Exponent Editing      7. Light Position Editing      8. Bump Map Test      9. Bump Map in Relative to Normal Vector      10. Rotation in Relative to Normal Vector      11. Bump Map in Absolute Mode      12. Rotation in Absolute Mode      13. Bumpiness Editing      14. Image Translation in Clamp - Bump Map      15. Image Scaling in Clamp - Bump Map      16. Image Scaling in Clamp - Bump Map      17. Image Scaling in Clamp - Bump Map      18. Image Scaling in Clamp - Bump Map      19. Bump Map with Texture Map      20. Rotation for Bump Map with Texture Map      21. Cube Environment Map      22. Rotation in Cube Environment Map      23. Rotation in Cube Environment Map      24. Rotation in Cube Environment Map      25. Rotation in Cube Environment Map      26. Sphere Environment Map      27. Sphere Environment Map      28. Sphere Environment Map      29. Rotation in Sphere Environment Map      30. Rotation in Sphere Environment Map      31. Specular Highlights on Top in Sphere Map      32. Specular Highlights on Top in Cube Map      33. Specular Highlights on Top in Cube Map      34. End Test      * 1. Texture Map      1. Introduction      2. Texture Map Test      3. Texture Map in Decal - Layer 1      4. Image Translation - Decal in Repeat Mode      5. Image Scale - Decal in Repeat Mode      6. Image Rotation - Decal in Repeat Mode      7. Image Translation - Blend in Clamp Mode      8. Image Translation - Blend in Clamp Mode      9. Image Translation - Blend in Clamp Mode      10. Image Translation - Blend in Clamp Mode      11. Texture Translation - Blend in Clamp Mode      12. Texture Scaling - Blend in Clamp Mode      13. Texture Scaling - Blend in Clamp Mode      14. Texture Rotation - Blend in Clamp Mode      15. Texture Rotation - Blend in Clamp Mode      16. Multiple Texture Maps - Layer 1      17. Multiple Texture Maps - Layer 2      18. Multiple Texture Maps - Layer 3      19. Multiple Texture Maps - Layer 4      20. Multiple Texture Maps with Modulate Mode in Layer 4      21. Multiple Texture Maps with Replace Mode in Layer 4      22. Multiple Texture Maps with Blend Mode in Layer 4      23. Multiple Texture Maps with Blend Mode in Layer 4      24. Multiple Texture Maps with Blend Mode in Layer 4      25. Multiple Texture Maps with Blend Mode in Layer 4      26. Multiple Texture Maps with Blend Mode in Layer 4      27. Multiple Texture Maps with Blend Mode in Layer 4      28. Multiple Texture Maps with Add Mode in Layer 4      29. Multiple Texture Maps with Add Mode in Layer 4      30. Multiple Texture Maps with Add Mode in Layer 4      31. Multiple Texture Maps with Modulate Mode in Layer 3      32. Multiple Texture Maps with Modulate Mode in Layer 3      33. Multiple Texture Maps with Modulate Mode in Layer 3      34. Multiple Texture Maps with Modulate Mode in Layer 3      35. Multiple Texture Maps with Modulate Mode in Layer 3      36. Multiple Texture Maps with Modulate Mode in Layer 3      37. Multiple Texture Maps with Modulate Mode in Layer 3      38. Multiple Texture Maps with Modulate Mode in Layer 3      39. Multiple Texture Maps with Modulate Mode in Layer 3      40. Multiple Texture Maps with Modulate Mode in Layer 3      41. Multiple Texture Maps with Modulate Mode in Layer 3      42. Multiple Texture Maps with Modulate Mode in Layer 3      43. Multiple Texture Maps with Modulate Mode in Layer 3      44. Multiple Texture Maps with Modulate Mode in Layer 3      45. Multiple Texture Maps with Add Mode in Layer 3      46. Multiple Texture Maps with Modulate Mode in Layer 2      47. Multiple Texture Maps with Modulate Mode in Layer 2      48. Multiple Texture Maps with Replace Mode in Layer 2      49. Multiple Texture Maps with Blend Mode in Layer 2      50. Multiple Texture Maps with Blend Mode in Layer 2      51. Multiple Texture Maps with Add Mode in Layer 2      52. Multiple Texture Maps with Modulate Mode in Layer 1      53. Multiple Texture Maps with Replace Mode in Layer 1      54. Multiple Texture Maps with Blend Mode in Layer 1      55. Multiple Texture Maps with Add Mode in Layer 1      56. Texture Transparency with Color Specific      57. Specular Highlights on Top      58. End Texture Map      * 1. Grace 2:         One unit test     A. Operations in DL Mode   * 1. Introduction   2. Open GL DL- Load HW\_Certification\_Study.psz   3. Open GL DL- Rotation   4. Open GL DL- Zoom and Pan   5. Open GL DL- Feature Line over Solid Display Mode   6. Open GL DL- HLR Display Mode   7. Open GL DL- Wire Frame Display Mode   8. Open GL DL- Path and Locations   9. Open GL DL- Path and Locations in Perspective view   10. Open GL DL- Object Selection   11. Open GL DL- Section in Cut mode   12. Open GL DL- End of test        * 1. Grace 3:     One unit test     A. Operations in Buffer Mode   * 1. Introduction   2. <Open GL BO- Load HW\_Certification\_Study.psz   3. Open GL BO- Rotation   4. Open GL BO- Zoom and Pan   5. Open GL BO- Feature Line over Solid Display Mode   6. Open GL BO- HLR Display Mode   7. Open GL BO- Wire Frame Display Mode   8. Open GL BO- Path and Locations   9. Open GL BO- Path and Locations in Perspective view   10. Open GL BO- Object Selection   11. Open GL BO- Section in Cut mode   12. Open GL BO- End of test      * 1. NXMark:      A large set of operations performed against multiple parts        List of parts:  small\_test\_part.prt   * 1. Engine.prt   2. Intake\_manifold1.prt   3. Mondeo.prt   4. Powertrain.prt   5. Saab.prt   6. Cgn\_noparam\_new.prt   7. Yellow\_sub\_new.prt         Operations:   * 1. NX empty run   2. Part Load   3. Display Update   4. Display Regenerate   5. High end visualization   6. Blank/unblank   7. Lighting   8. View clipping   9. Shaded mode   10. Studio mode   11. Texture mapping   12. Layering   13. Graphic operations 1: Display Dynamics   14. graphic operations 2: Pan/zoom/rotate   15. Graphic operations 3: Pan/zoom/rotate in various display modes   16. Graphic operations 4: Miscellaneous   17. Graphic operations 5: scene editor   18. High quality shade   19. View Layouts   20. Camera operations   21. View sectioning   22. Hidden surface removal   23. Update feature   24. Silhouette   25. Boolean ops   26. Part closure   27. Exit NX     **NXMark Steps:**   * 1. part load      * 1. display dynamics (pan, zoom, rotate, fit)      * 1. edges   set ups lights  enables wireframe, perform display dynamics  enable fully shaded with hidden edges off, regen, perform display dynamics  enable fully shaded with hidden edges on, regen, perform display dynamics  shaded with 3 lights, line smooth, regen, perform display dynamics  shaded with 6 lights, line smooth, regen, perform display dynamics     * 1. translucency and facet edges   loop through different translucency settings, perform rotations  enable facet edges, rotate     * 1. fogging and surf analysis   enable fogging (4 different modes) and perform display dynamics  Cycle through all face analysis modes and perform display dynamics  fringe  hedgehog  contour lines  reflection lines black  reflection lines colored  reflection lines simulated horizon  reflection lines photo horizon     * 1. Scene editor   True shading with global materials  change global materials several times  floor reflections  grid  Lighting type 1, 2  Basic lights, Scene Left Top, Scene Top  and much more     * 1. High qual shade   goes through 9 modes of high quality shading  ShadeMethodHybridRadiosity  ShadeMethodGouraud  ShadeMethodPhong  ShadeMethodImproved  ShadeMethodPreview  ShadeMethodPhotoRealistic  ShadeMethodRayTraced  ShadeMethodRayTracedFfa  ShadeMethodRadiosity     * 1. view layouts (currently empty)      * 1. Camera ops   opens layout and plays different camera positions     * 1. sectioning   sections along the 3 axis multiple times     * 1. hidden surface removal   (currently deactivated)      * 1. update feature (modeling)        * 1. silhouette   Open a four view layout  apply silhouettes     * 1. Boolean ops   Unite, subtract, intersect along axes    ATS:  15 unit tests, each targeting an area     A. Background setting wireframe   * 1. De-emphasis   2. Display Section   3. Display Mode   4. Export Image   5. Face Analysis   6. Grid Display   7. HD3D   8. Light Direction   9. Listing Window   10. Mirror Display   11. Multiple Views   12. Raster Image   13. Synchronize Views   14. Visualization Performance Test       Manual NX Testing:  Requires advanced NX knowledge, performs a variety of manual tests that are not covered by the automated unit tests above   * 1. Use the parts in the Manual\parts subfolder   2. Use the guide Manual\_test.pdf. However, this test references an old UI which changes frequently with each version of NX, so you will have to figure out how to map the commands to the current version of NX.   3. Export/Import Image test (use boat\_studio.prt)      1. Try exporting in the following formats: CGM, IGES and JT      2. Import the same and other files   4. Real Time Shadows (use shadow\_2.prt)      1. Use the scene editor to create shadows   5. High Definition Rendering Test      1. Use teapot\_2.prt      2. Use Scene Editor in the Render tab's Visualization      3. Change the background using the provided images      4. Use various Environments/Global Illumination Environments      * 1. Test Large Assembly      1. Use fmc\_assy\_facets\_2.prt      2. Apply various display dynamics to the assembly      * 1. Test Studio Display using Advanced Studio      1. Test background images      2. Test backdrops      3. Test True Shading      4. Apply textures      5. Use Capture Image      6. Test Studio Material Editor      * 1. Work with True Shade Display, Background Images and Backdrops      1. Use spheres\_true\_shade\_test.prt      2. Use the True Shade Editor      3. Test global materials      4. Test specific materials      5. Test Floor, Floor Effects and Lights      * 1. Advanced Studio IRAY      1. Use AA\_RTS\_drill\_assy.prt      2. Use Improved Render/Full Render quality modes      3. Apply decal stickers      4. Test System Scenes from Studio Task      5. Utilize Scene Editor to test lighting      * 1. VR Testing      1. You will need Virtual Reality license      2. Use the variety of the many parts specified in the test manual.  These tests are suited for VR testing      3. Exercise Load Options      4. Try different facet types      5. Test Mirrored Display      6. Test unit assembly      7. Test Multiple View layout      8. Test facet tolerances      9. Test blanking/unblanking objects      10. Test locomotion (head and body motion)      11. Test navigation cube      12. Test select/deselect      13. Test teleportation      14. Test Select and Drag      15. Localize part names      16. Test visibility control      17. Test view sectioning      18. Test ruler      19. Create and retrieve snapshot      20. Test panel visibility      * 1. Test various regressions      1. Go through the list of key PR tests |  |