**Nutanix X-Ray**

**INFRASTRUCTURE TESTING FOR HYPERCONVERGED PLATFORMS**
Since the introduction of server virtualization, testing IT platforms has become an increasingly more complex aspect of the infrastructure life-cycle. Hyperconverged infrastructures (HCI) and enterprise cloud technologies go beyond traditional virtualization by mixing compute and storage resources which are then shared by multiple application workloads.

Infrastructures are typically tested with an emphasis on raw performance metrics, showing maximum throughputs, or lowest latency figures in controlled, and unrealistic settings with no sense of how the application is affected over time.

**CONSISTENT PERFORMANCE & FAILURE SCENARIO TESTING**
The typical approach to infrastructure testing must change to accurately reflect modern business requirements, enabling organizations to accurately assess their applications’ consistent performance, while under a barrage of common data-center scenarios.

X-Ray’s objective is to provide a flexible, vendor-neutral hyperconverged infrastructure testing product that organizations can use to comprehensively assess their data-center infrastructures.

**TEST SCENARIOS**
X-Ray’s tests reflect the type of real-world scenarios that hyperconverged infrastructures experience throughout their life-cycles. Examples include understanding the impact to applications in noisy neighbor scenarios, or the impact to applications during a rolling infrastructure upgrade process, or when many snapshots are being taken.

X-Ray’s suite of fully customizable tests offers the most complete solution for testing any hyperconverged infrastructure, and enables organizations to evaluate all key areas of the infrastructure life-cycle when placed under real-world stress and failure scenarios:

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<th>Infrastructure Life Cycle Phase</th>
<th>Related Tests</th>
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<tr>
<td><strong>DAY 0</strong> Infrastructure Performance</td>
<td>Four Corner Microbenchmark Throughput Scalability</td>
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<td>Shows the raw infrastructure performance.</td>
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<tr>
<td><strong>DAY 1</strong> Application Performance</td>
<td>VDI Simulator OLTP Simulator</td>
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<td>Captures and analyzes workload profiles to understand application specific performance.</td>
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<td><strong>DAY 2</strong> Data Protection</td>
<td>Snapshot Impact VM Clone Impact</td>
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<td>Examines the impact data protection activities on production applications.</td>
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<td><strong>DAY 30</strong> Infrastructure Resiliency</td>
<td>Sequential Node Failure Rolling UpgradeExtended Node Failure</td>
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<td>Examines the impact of failure events on the running applications.</td>
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<td><strong>DAY N</strong> Infrastructure Scalability</td>
<td>Database CoLocation HCl Workflow</td>
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<tr>
<td>Examines the impact of introducing new application workloads onto the same infrastructure.</td>
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X-RAY REPORTING

Following the testing phase completion, all test logs and a summary report are made available to view and download. Analyzing the test results can provide crucial decision-making information such as highlighting the difference between hyperconverged platforms or product versions of the same platform, and ultimately enables organizations to make fully informed infrastructure life-cycle decisions.

The completed reports show results for all tests run, including the following details:

- Executive Summary detailing high-level overview of results
- Details on each test run, including the steps that have been carried out
- In-depth results for each of the tests that were run
- Graphical results for each test run (i.e. OLTP graphical test results below)

SYSTEM REQUIREMENTS

- Minimum of one (non-production) cluster used for testing, with at least one datastore
- Network access to management UI (Prism or vCenter) and user VMs
- IP addresses for the nodes (for test targets)
- User name, password, and IP address for each IPMI
- The system where X-Ray is deployed cannot be used as an X-Ray test target for failure testing
- X-Ray VM with 4x vCPUs and 4GB RAM

HYPERCONVERGED PLATFORM SUPPORT

- Nutanix Enterprise Cloud (Nutanix NX, Cisco® UCS, Dell EMC™ XC, Fujitsu™ XF, HPE™ ProLiant, IBM® CS, KLAS Telecom, Lenovo™ HX/SXN)
- VMware vSAN®
- Cisco® HyperFlex
- HPES™ Simplivity
- IBM® Hyperconverged Systems
- Microsoft® Storage Spaces Direct

HYPERVISOR SUPPORT

- Nutanix AHV
- VMware vSphere® ESXi
- Microsoft® Hyper-V

ADDITIONAL RESOURCES

- X-Ray product page: https://www.nutanix.com/xray
- X-Ray community: https://next.nutanix.com/nutanix-x-ray-18
- Questions? Email: xray@nutanix.com