As obvious as it might at first sound, we need to remember that organizations building cloud environments face challenges in delivering application services. A key action is the need to define the application service end-to-end, ready for use, so that it consistently meets business needs. In practical terms this means characterizing workloads, specifying an optimized application environment, optimizing reliability and scalability, and automating workflows. Deploying on pre-validated server, storage, and network infrastructure will accelerate the process but it still needs a strong, validated testing process. As something of an answer here then, IT as a Service (ITaaS) is a cloud-based architecture where IT provides line-of-business with scalable, on-demand, secure IT services, either on premise or at third-parties.

Testing as a Service (TaaS) promises to provide IT with control and the LOBs with flexibility. TaaS will reduce some upfront CAPEX investments and is supposed to help to source requirements on an OPEX model. TaaS allows IT and the LOBs to include an on-demand, scalable, secure quality assurance process for their applications, accelerating testing and reducing the risk of moving applications to a cloud-based architecture.

**Deploying Your Applications to the Cloud**

This product claims to offer an end-to-end infrastructure solution as an “On and/or Off Premise” hybrid cloud solution. TaaS powered by xStream™ for SAP® applications is a joint solution for developing and testing SAP HANA workloads to be deployed in the cloud is based on:

- Virtustream® xStream, an enterprise-class cloud solution for private, public and hybrid clouds.
- Infosys Testing Solution for SAP applications.
- The FlexPod® solution of NetApp® storage systems, Cisco®
• Unified Computing System servers based on the Intel®
• Xeon® E7 v2 processor family, and Cisco Nexus fabric switches.

TaaS powered by xStream™ for SAP® applications provides a single and efficient solution to manage your QA/testing operations prior to cloud deployment.

**Virtustream® xStream**

xStream™ is enterprise-class cloud management software for private, virtual private, public and hybrid clouds—available as software within the TaaS on premise solution, and as a full enterprise infrastructure-as-a-service for hosting the TaaS in the cloud. xStream™ is enhanced by Virtustream® μVM™ technology, delivering enterprise security and compliance with multi-tenant cloud efficiency and performance SLAs for all applications—both legacy and web-scale.

**Infosys Testing Solution for SAP applications**

Infosys Testing Solution for SAP applications is a testing model that brings together people and infrastructure into a shared services function. It provides a prebuilt set of standard SAP business test scenarios for multiple industry domains that ensure high levels of repeatability, predictability and test coverage.

Benefits of the Infosys SAP Testing Solution for SAP applications include:

• Delivers on business requirements-driven end-to-end testing.

• Reduces cycle time and execution costs through test automation.

• Enhances testing coverage at business process level.

**FlexPod®**

The FlexPod® data center platform, jointly developed by NetApp and Cisco, is a flexible converged infrastructure platform composed of pre-validated storage, networking, and server technologies. It’s designed to increase IT responsiveness to business needs while reducing the overall cost of computing with maximum uptime and minimal risk. FlexPod components are integrated and standardized to help you achieve timely, repeatable, consistent deployments that eliminate guesswork and minimize risk. As a result, you can understand and better predict the exact power, compute capacity, usable capacity, performance, and cost of each FlexPod deployment.

**Achieve a Software-defined Enterprise with IT in Control**

Until now most public clouds have been “best effort”— basic virtualization, a toolkit, a set of APIs and web access. Businesses have mainly used these public clouds for test/dev and web-scale applications.

Enterprises need a cloud that delivers the economic and business benefits for a complex portfolio of applications, legacy and web-scale;
a secure, simple to manage cloud that is performance guaranteed, compliant and includes backup and disaster recovery; a cloud that seamlessly mixes existing IT, onsite private clouds, and public/virtual private clouds.

The Virtustream enterprise-class cloud solution meets all of these enterprise requirements, while delivering the benefits of cloud to IT: making it more dynamic, on-demand and at a lower cost with multi-tenant economies of scale.

Virtustream, one of the first SAP-certified global providers of cloud services for SAP HANA, offers comprehensive software and infrastructure solutions worldwide.

With all the benefits of Virtustream xStream™, the Virtustream Cloud Management Platform software, the TaaS powered by xStream™ for SAP® applications solution enables SAP customers to develop and test SAP applications and SAP HANA workloads on premise, deploy to the cloud, and accelerate their journey to a software-defined enterprise with IT in control (IT as a Service).

A leading provider of end-to-end cloud software and infrastructure services, Virtustream offers many benefits over traditional models for delivering IT services and applications. These include on-demand pricing, better performance, elastic scalability and advanced security and compliance features.

Most enterprises and government agencies today use a broad mix of legacy and modern applications. Virtustream enables IT to provide ITaaS for their LOB “customers” so that they gain the benefits of cloud computing with granular servicelevel agreements (SLAs) in these mixed environments.

For example, a delay in readying an application for regulatory changes could cause a company to lose its compliance certification. Encountering post-deployment issues in the cloud environment can lead to unforeseen downtime, long service interruption, and severe business disruption. Any organization that cannot develop, test, and deploy application changes and updates quickly could face long application development lead times, resulting in go-live delays that hamper day-to-day operations.

Is there a single and efficient solution to manage their applications testing/QA for cloud deployment inexpensively and efficiently?

The answer is Infosys Testing Solution for SAP applications; a testing model that brings together people and infrastructure into a shared services function. It provides a prebuilt set of standard SAP business test scenarios for multiple industry domains that ensure high levels of repeatability, predictability and test coverage. These ready-to-use test scenarios and test cases can be downloaded in any test management tool formats.

The solution utilizes a standardized way to create and maintain a test scenario repository through business process modeling. New scenarios can be added on run time and saved into the project repository in a consistent format. Impact analysis is facilitated by use of trans-action-code driven approach and inputs from automation tools can be fed into the solution directly. Business processes and test scenarios available in the solution repository are aligned with Architecture of Integrated Information Systems (ARIS) flows.

The benefits of the Infosys Testing Solution for SAP applications include:

- Delivers on business requirements-driven end-to-end testing.
- Reduces cycle time and execution costs through test automation.
- Enhances testing coverage at business process level.

Overcome Cloud Deployment Testing Challenges
The emergence of cloud deployment is compelling organizations to give testing much needed importance. However, which it comes to the challenges of cloud deployments, both on premise and at third-party providers, tradeoffs must be considered and choices must be made.
“Deploying on pre-validated server, storage, and network infrastructure will accelerate the process but it still needs a strong, validated testing process.”

**Accelerate Application Deployment**

To reduce the time and cost of deploying infrastructure and applications, companies are adopting a converged infrastructure approach that leverages shared resources, to slash design, planning, and testing phases by months.

Together, NetApp and Cisco offer the FlexPod® data center platform that’s ready for virtualized environments yet is flexible enough to grow at your own pace to a fully private cloud. FlexPod enables rapid provisioning and de-provisioning of virtual resources, making it an ideal platform for development and test environments and fits right into your current infrastructure, leveraging existing resources and minimizing or eliminating technology replacement costs.

FlexPod includes best-in-class components in a standardized configuration that scales from entry-level designs up to high performance big data workloads.

- The power of the latest Intel® Xeon® processor E7 v2 product family adds new levels of performance and capabilities for compute- and memory-intensive workloads.
- Cisco Nexus fabric switches identify and consolidate all network traffic onto a single simplified, cost-effective architecture based on Fibre Channel over Ethernet (FCoE).
- NetApp FAS (Fabric Attached Storage) systems reduce cost and complexity for virtualized infrastructures by meeting all of your storage requirements with a unified storage platform that supports all protocols.

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<tr>
<th>FlexPod</th>
<th>Data Center Solution</th>
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<tbody>
<tr>
<td>Cisco UCS B460 M4 Blade Server</td>
<td>4X Intel® Xeon® processors E7-4890 v2</td>
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<td>1 TB memory Dolph SLES for SAP 11 SP3</td>
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<td>Cisco Nexus Switches</td>
<td>Cisco UCS 6200 Series Fabric Interconnects</td>
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<td>NetApp FAS 8040 (fabric-attached</td>
<td>Unified scale-out storage</td>
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<td>Up to 6 nodes per storage unit</td>
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<td>120X 600 GB SAS 10K</td>
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**Cisco – NetApp 12 TB Configuration for SAP HANA**
Deliver Real-time Insight with SAP HANA

SAP HANA is an in-memory data platform that is deployable in an on-premise appliance, or in the cloud. It is a revolutionary platform that’s best suited for performing real-time analytics, and developing and deploying real-time applications.

Whenever companies have to go deep within their data sets to ask complex and interactive questions, and have to go broad working with enormous data sets of different types and different sources at the same time, SAP HANA is well-suited. Increasingly there is a need for this data to be recent and preferably in real-time. Add to that the need for high speed, and the need to do all this without any pre-fabrication and you have a unique combination of requirements that only SAP HANA can address effectively.

With the Intel Xeon E7 v2 processor family, SAP was, as usual, ahead of the pack. SAP optimized SAP HANA to take advantage of all the extra horsepower. Intel increased both the clock speed of the cores and the amount of available memory with Intel Xeon E7 v2 processors.

Tests have confirmed that the performance of the Intel Xeon E7 v2 processors will bring real value to customers demanding more memory, more CPU scalability, or more performance—or all three. To transform petabytes of data into strategic insights, organizations need systems that can quickly handle their data-demanding workloads.

By deploying fast, reliable servers optimized for the Intel Xeon E7 v2 processor, SAP HANA can process and analyze vast quantities of data in real time to extract value and gain a competitive advantage.

What this really means for customers of SAP HANA is that they can gain better insight into the business with more speed, more power, and more data volume. With parallelized database operations across all of the processors and cores, and all available memory in the system, customers can achieve even more mind-blowing performance.

Ensure Integrity of the Cloud Environment

To deploy an application to the cloud, a myriad of challenges must be understood and mitigated. Distributed users, systems and software must be able to validate identity, and track and log access to ensure the integrity of the cloud environment. Virtustream xStream™ enables secure cloud computing environments by employing industry-leading innovations and compensation controls such as Intel Trusted Execution Technology (TXT), two factor authentication with One Time Password, and encryption throughout the system. xStream™ also ensures full visibility
into the entire cloud stack via a single pane of glass management interface.

To enact enterprise security controls, xStream™ offers several features, including role-based authorization, network controls and advanced multi-tenancy and cloud federation. To meet the most demanding cloud security requirements and to help enterprises maintain compliance, xStream has options for continuous audit process management, security information and event management (SIEM), and governance, risk, and compliance (GRC) management.

Provide End-to-end Testing Assurance for SAP HANA Workloads
TaaS powered by xStream™ for SAP® applications provides a single and efficient solution to manage applications testing/QA for cloud deployment. This process results in the delivery of cloud-ready mission-critical applications with shortened testing time and cost, while also reducing the number of bugs and code defects that are released to production.

If you’re like most enterprises, your application deployment has both an on-premise and a cloud option. TaaS powered by xStream for SAP Applications can be deployed on premise, in the cloud, or in a hybrid environment, on an SAP Certified Appliance for SAP HANA.

For enterprises with an SAP-centric stack, there are several options available in the market, including Virtustream’s SAP-certified cloud services.

And SAP experts at Infosys offer services all the way from planning to migration to analytics and development of new apps for SAP HANA to successfully deploy either with a cloud service provider like Virtustream or on-premise in a customer’s data center.

Summary
The “TaaS powered by xStream™ for SAP® applications” hybrid cloud solution enables SAP customers to accelerate their journey to a software-defined enterprise by developing and testing SAP HANA workloads, both on-premise or in the cloud, with complete IT control. Customers can then deploy to the cloud either on-site or off-premise with a cloud service provider. TaaS powered by xStream™ for SAP® applications include:

- Virtustream® xStream Cloud Management Platform software.
- Infosys Testing Solution for SAP applications and Migration Services.
- The FlexPod® data center platform solution from NetApp® and Cisco® powered by Intel® Xeon® E7 v2 processors.
- Virtustream Cloud Services for SAP HANA.

The benefits of the TaaS joint solution include:

- Reduces cloud deployment risk with an SAP Certified platform composed of validated storage, networking, and server technologies.
- Improves control with ITaaS as an operational model for IT to create services for the LOBs.
- Reduces time to market for application patches and updates, while also decreasing the number of bugs and defects in each release.
- Provides flexible deployment models for secure SAP HANA applications and data on premise, hosted by a cloud service provider, or hybrid cloud combinations.
- Offers an optimal hybrid cloud solution with enterprise-grade security and compliance.

Find Out More