



What Sellers Need to Know

**IBM[®] System x Solutions for
One and Two Socket Servers**



Table of Contents

IBM System x Solutions	1
System x Cloud & Virtualization Solutions.....	2
IBM System x Integrated Offering for Cloud with VMware	2
IBM System x Reference Architecture for Microsoft Hyper-V.....	3
IBM ReadyPack for Cloud with IBM SmartCloud Entry.....	4
Virtual Desktop Solutions	5
SmartCloud Desktop Infrastructure Reference Architecture for VMware View.....	5
SmartCloud Desktop Infrastructure Reference Architecture for Citrix on XenDesktop	6
IBM SmartCloud Desktop Infrastructure Reference Architecture for Citrix VDI-in-a-Box.....	7
SmartCloud Desktop Infrastructure Reference Architecture for Microsoft Windows Servers 2012 VDI	8
SAP Solutions.....	9
IBM Systems Solution for SAP HANA™, SAP Business One Analytics	9
IBM Systems Solution for SAP Discovery	10
Big Data & Business Analytics Solutions.....	11
IBM System x Reference Architecture for Hadoop: InfoSphere BigInsights	11
IBM System x Reference Architecture for Hadoop: Cloudera	12
IBM System x® Reference Architecture for Hadoop: MapR™	13
IBM System x Reference Architecture for Hadoop: InfoSphere Streams	14
IBM System x Reference Architecture for SAS Visual Analytics	15
Microsoft Fast Track Data Warehouse for SQL Server 2012 on System x.....	16
IBM Smart Analytics 5600 R3.....	17
Data Management Solutions	18
IBM System x® Reference Architecture for Microsoft SQL Server	18
High Performance Computing	19
IBM System x GPFS™ Storage Server (GSS)	19
Business Continuity Solutions	20
IBM System x Reliability Solution for Stratus everRun Enterprise	20

IBM System x Solutions

Customers with business problems need complete solutions that combine software with complementary system hardware. This reduces complexity and can lead to quicker time to value for the customer. IBM System x one and two socket servers provide an excellent foundation for a multitude of solutions. Reference Architectures based upon these platforms provide customers with hardware configurations optimized for performance, and in some cases tightly integrated server/solutions with a single part number.

IBM provides many resources to assist the seller including the [High Volume Master Sales Kit](#) with details on each model of one and two socket server and the [X86 Workload Solutions eGuide](#) which contains sales assets for mission critical solutions and System x portfolio of services and options. In addition, [IBM Hardware Sizing Questionnaires](#) are provided for assisting in the sizing of select software solutions.

The following sections detail solution areas and specific solutions along with IBM System x one and two socket integrated offerings, reference architectures and other key resources. These solutions provide customers a platform optimized to address their business needs.

System x Cloud & Virtualization Solutions

[IBM System x Integrated Offering for Cloud with VMware](#)

Offer Type

Integrated Solution

Business Challenge

- Need integrated storage and networking
- Need automation of resource allocation
- Need simplified management for quicker time to value

Solution Summary

Pre-integrated offering for System x that leverages the IBM SmartCloud Entry cloud management stack. Low-cost, easy-to-use entry private cloud implementation with simple web-based portal enabling user self provisioning, platform management, basic image management, & basic metering.

The solution includes: 4 System x3650 M4 servers, DS3524 storage, G8000 Network Switch, VMware VSphere 5.0 Essentials Plus, IBM SmartCloud Entry 2.4 for System x, IBM Systems Director 6.3 with Active Energy Manager

Client Benefits

- Faster Time to Value with an all inclusive, low price-point cloud offering, which eases setting up of cloud environment.
- SmartCloud Entry provides a simple, entry private cloud implementation, with self service portal, basic metering, provisioning.
- SmartCloud Entry provides industry leading ease of use for early cloud adopters.
- Ability to manage other hypervisors (KVM, later Hyper-V), platforms (any non –IBM X86, Power, later System z), from this management node.
- Tested configuration provides reference configuration and implementation instructions for Business Partners to customize.

Additional Resources

- [Seller Presentation](#)
- [Client Presentation](#)
- [Solution Brief](#)
- [Reference Architecture](#)

IBM System x Reference Architecture for Microsoft Hyper-V

Offer Type

Reference Architecture

Business Challenge

- Balance cost and IT pressures
- Optimize utilization of dependable IT hardware & resources
- Support rapid deployment of virtual machines
- Keep data available and secure

Solution Summary

Highly reliable, scalable platform based on the trusted performance of System x3650 M4 servers with converged networking and robust XIV storage.

Designed to support the most demanding virtualization requirements for small and medium sized businesses. Provides a proven framework for highly robust and manageable data center environments at an entry-level price point.

First Microsoft Windows 2012 Fast Track 3.0 Small configuration certified reference architecture on IBM hardware

Client Benefits

- Takes advantage of x3650 M4 servers to enhance performance and reduce power consumption over x3650 M3 reference architectures
- IaaS platform with fast, secure, redundant networking & robust, high performance storage.
- Reduced physical sprawl, power consumption, total cost of ownership, and server administrative overhead.
- Microsoft Hyper-V hypervisor provides advanced virtualization capabilities for improved resource utilization and workload consolidation, and failover clustering for improved reliability. The data center edition can enable users to reduce client OS licensing fees.

Additional Resources

- [Solution Brief](#)
- [Client Presentation](#)
- [Reference Architecture](#)

IBM ReadyPack for Cloud with IBM SmartCloud Entry

Offer Type

Reference Architecture

Business Challenge

- Need reliable on-demand access to applications.
- Optimize utilization of IT resources.
- Balance cost and IT pressures.

Solution Summary

Transform your virtual environment to a cloud infrastructure based on the reliable, affordable-performance of System x servers with converged networking and storage. Establish your Private Cloud with IBM SmartCloud Entry software with self-service portal, automation and metering.

Client Benefits

- Fast time to value with a solution that is simple to deploy, easy to use and works with existing infrastructure
- Accelerate infrastructure deployment and service delivery to quickly respond to changing business needs
- Dramatically increase IT efficiency with standardization and lower operations cost
- Scale as needed to improve quality and meet demand with continuous availability
- Enable self-service with a simple interface that provides oversight
- Expandable to advanced Cloud offerings

Additional Resources

- [Client Presentation](#)
- [Solution Brief](#)
- [Reference Architecture](#)
- [Sales Kit](#)

Virtual Desktop Solutions

SmartCloud Desktop Infrastructure Reference Architecture for VMware View

Offer Type

Reference Architecture

Business Challenge

- Complexity of managing existing desktop environments
- Increasing mobility of work
- Data security and compliance concerns
- The changing ownership of endpoint devices with bring-your-own-device (BYOD) programs
- The need for rapid recovery from theft, failure, and disasters

Solution Summary

Pre-tested Reference Architecture features VMware View software powered by IBM System x. This flexible architecture that can handle small to large scale Virtual Desktop deployments and provide high availability, a rich end-user experience and built-in security.

Client Benefits

- Virtual Desktops at lower TCO and support costs than Traditional PCs over a 3 year period
- Less than \$400 per virtual desktop per year vs \$2,000+ for traditional desktops (acquisition, maintenance, patches, downtime, calls)
- Streamlines management and provides enhanced security
- Pre-configured and validated reference architecture simplifies implementation and accelerates time to value
- Modular design that can expand as your needs grow
- Gives users access to data from virtually anywhere, on whatever device they choose for increased productivity

Additional Resources

- [Reference Architecture](#)

SmartCloud Desktop Infrastructure Reference Architecture for Citrix on XenDesktop

Offer Type

Reference Architecture

Business Challenge

- Complexity of managing existing desktop environments
- Increasing mobility of work
- Data security and compliance concerns
- The changing ownership of endpoint devices with bring-your-own-device (BYOD) programs
- The need for rapid recovery from theft, failure, and disasters

Solution Summary

Pre-tested Reference Architecture features Citrix XenDesktop software powered by IBM System x. This flexible architecture that can handle small to large scale Virtual Desktop deployments and provide high availability, a rich end-user experience and built-in security.

Client Benefits

- Virtual Desktops at lower TCO and support costs than Traditional PCs over a 3 year period
- Less than \$400 per virtual desktop per year vs \$2,000+ for traditional desktops (acquisition, maintenance, patches, downtime, calls...)
- Streamlines management and provides enhanced security
- Pre-configured and validated reference architecture simplifies implementation and accelerates time to value
- Modular design that can expand as your needs grow
- Gives users access to data from virtually anywhere, on whatever device they choose for increased productivity

Additional Resources

- [Reference Architecture](#)

IBM SmartCloud Desktop Infrastructure Reference Architecture for Citrix VDI-in-a-Box

Offer Type

Reference Architecture

Business Challenge

- Complexity of managing existing desktop environments
- Increasing mobility of work
- Data security and compliance concerns
- The changing ownership of endpoint devices with bring-your-own-device (BYOD) programs
- The need for rapid recovery from theft, failure, and disasters

Solution Summary

Pre-tested Reference Architecture features Citrix VDI all-in-one software powered by IBM System x. This flexible architecture that can handle small to large scale Virtual Desktop deployments and provide high availability, a rich end-user experience and built-in security. This offer provides optimal price/performance to drive VDI sweet spot of <500-1,500 users

Client Benefits

- Virtual Desktops at lower TCO and support costs than Traditional PC's over a 3 year period
- Less than \$400 per virtual desktop per year vs \$2,000+ for traditional desktops (acquisition, maintenance, patches, downtime, calls...)
- Easy to deploy and manage all-in-one software and System x servers
- Streamlines management and provides enhanced security
- Pre-configured and validated reference architecture simplifies implementation and accelerates time to value
- Modular design enables VDI entry point that is easy to expand as your needs grow.
- Rich end-user experience with Citrix HDX support
- Gives users access to data from virtually anywhere, on whatever device they choose for increased productivity

Additional Resources

- [Reference Architecture](#)

SmartCloud Desktop Infrastructure Reference Architecture for Microsoft Windows Servers 2012 VDI

Offer Type

Reference Architecture

Business Challenge

- Complexity of managing existing desktop environments
- Increasing mobility of work
- Data security and compliance concerns
- The changing ownership of endpoint devices with bring-your-own-device (BYOD) programs
- The need for rapid recovery from theft, failure, and disasters

Solution Summary

New reference architecture featuring Microsoft WS2012 VDI embedded software powered by IBM System x rack server that is simple to set up and manage with high availability, an rich end-user experience and security built in. This offer provides optimal price/performance to drive VDI sweet spot of <600 users

Client Benefits

- Less than \$400/desktop/year vs \$2,000+ for traditional desktops (acquisition, maintenance, patches, downtime, service calls...)
- Upgrade to Windows Server 2012 and you get full VDI solution included at no extra cost
- Single MS OS/VDI platform minimizes licensing costs
- Pre-configured and fully tested reference architecture simplifies implementation and accelerates ROI
- Easy to deploy and manage all-inclusive software with innovative IBM System x rack server
- Streamlines management and provides enhanced security
- Modular design enables VDI entry point that is easy to expand as your needs grow
- Access to data and apps from virtually anywhere, on whatever device they choose for increased productivity

Additional Resources

- [Reference Architecture](#)

SAP Solutions

[IBM Systems Solution for SAP HANA™, SAP Business One Analytics](#)

Offer Type

Reference Architecture

Business Challenge

- Deploy SAP HANA with Business One Analytics to achieve:
- Faster running reports and dashboards via SAP HANA database
- Access to all SAP Business One data with freestyle Enterprise search
- Web access to dashboards and enterprise search

Solution Summary

New Reference Architecture supporting an SAP HANA solution for SAP Business One Analytics solutions. Integrated business management application with real-time access to information and data analysis capabilities to support decision making. IBM is only one of the top four x86 vendors with validated configurations for this solution

Client Benefits

- Power of the SAP HANA platform for small & midsize business. Ideal for Business One users
- Easy to implement and use - typical go live in 6~8 weeks
- Access to large amounts of data in real time for more accurate insight
- Reference architecture for simpler deployment & improved SAP analytics performance
- Robust System x platforms provide:
 - Balance of uptime, performance, density and cost efficiency
 - Outstanding performance, processor scalability, memory scalability, and integrated SSD
 - Optimized to deliver orders of magnitude improvement in SAP analytics performance

Additional Resources

- [Seller Presentation](#)
- [Client Presentation](#)
- [SAP Business One Solution Brief](#)
- [Get Analytical with System x and SAP HANA Sales Play](#)

IBM Systems Solution for SAP Discovery

Offer Type

Integrated Solution

Business Challenge

- Quick development of SAP applications
- Require SAP best practices
- Balance cost and IT pressures

Solution Summary

Easy to order & implement with preloaded, preconfigured x3650 M4 server with ready to use SAP implementation. Ready to use templates for customers, Systems Integrators, & consultants. IBM is the only x86 vendor offering SAP Discovery. This offer is ideal for an application development environment, new SAP applications (HANA)/upgrades, proof-of-concept / training. A single part number is used for ordering: 7915-GSX*

Client Benefits

- Speedier SAP application deployment and training
- Access to a complete SAP environment for development, training, proof-of-concept activities. Hands-on experience with practical examples & business implementations
- Low Risk, Low Effort - Optimized solution stack
- Lower SAP application development costs

Additional Resources

- [Seller Presentation](#)
- [Sales Play](#)

Big Data & Business Analytics Solutions

IBM System x Reference Architecture for Hadoop: InfoSphere BigInsights

Offer Type

Reference Architecture

Business Challenge

- Data growth is so fast, many enterprises are analyzing a smaller percentage of data than before
- Customers don't have time, resources or capital to experiment with what does and does not work in big data analytics
- Management of volumes and variety of data to apply analytics

Solution Summary

The x3650 M4 BD (or [x3630 M4](#)) and [x3550 M4](#) reference architectures are built with pre-integrated components using IBM's Intelligent Cluster process to make big data platforms easy to order and deploy.

Client Benefits

- Ease of integration: Reference architectures help ensure analytics work
- Flexibility and simplicity: Reference architectures help strike a cost effective balance between requirements of the solution and time to value
- Improved performance and reliability: IBM innovations help overcome shortcomings of open source software

Additional Resources

- [Seller Presentation](#)
- [Client Presentation](#)
- [Sales Kit](#)
- [Reference Architecture](#)

IBM System x Reference Architecture for Hadoop: Cloudera

Offer Type

Reference Architecture

Business Challenge

- Customers with limited resources looking for an open-source solution
- Big data analytics IT infrastructure must be powerful, affordable, scalable and enterprise friendly
- Need to accelerate time to value with faster ordering and quicker deployment

Solution Summary

Cloudera certified x3650 M4 BD or x3630 M4 reference architectures are built with pre-integrated components using IBM's Intelligent Cluster process to make big data platforms easy to order and deploy.

Client Benefits

- Cloudera certified System x reference architectures provide thoroughly tested and integrated solutions
- Preconfigured Cloudera certified hardware platforms enables teams to implement Hadoop style analytics quickly
- System x solutions are proven IBM innovation around industry standard components to minimize costs and simplify deployment

Additional Resources

- [Client Presentation](#)
- [Sales Kit](#)
- [Reference Architecture](#)

IBM System x® Reference Architecture for Hadoop: MapR™

Offer Type

Reference Architecture

Business Challenge

- Need large scale data collection & analytics
- Need to complement existing Data Warehouse environments
- Desire to enable new services while reducing the costs in enterprise architecture

Solution Summary

MapR M5 Edition is the first release of the MapR Apache Hadoop distribution to be validated on the IBM System x M4 (x3650 M4 BD or x3630 M4) reference architecture. This solution provides increased performance over previous generations of servers with increased storage and memory capacity with the M4 generation of servers. This solution also supports the Intelligent Cluster fulfillment process.

Client Benefits

- Easy to order and deploy big data platforms for MapR for clients' Apache Hadoop implementation
- Preconfigured, validated MapR hardware platforms enables clients to implement Hadoop analytics quickly
- Direct Access NFS™
- High Availability (HA)
- SnapShots
- Mirroring for Point-in-Time recovery
- Scalable to trillions of files

Additional Resources

- [Client Presentation](#)
- [Solution Brief](#)
- [Sales Kit](#)

IBM System x Reference Architecture for Hadoop: InfoSphere Streams

Offer Type

Reference Architecture

Business Challenge

- Data growth is so fast, that many enterprises are analyzing a smaller percentage of data than before
- Customers don't have time, resources or capital to experiment with what does and does not work in big data analytics
- Management of volumes and variety of data to apply analytics

Solution Summary

Performs complex real-time analytics on data-in-motion. Engineered specifically for InfoSphere Streams to address the data-in-motion analytics market. These System x reference architectures are anchored by System x3550 M4 and x3690 X5 servers and scale from entry through high end configurations

Client Benefits

- Streams applications on System x: highly cost-effective & provide great degrees of parallelism in processing complex, continuous analytics
- Analyze big data in-motion with less stress
- Perform low-latency analysis on large volumes of streaming data
- Analyze data in its native format using IBM InfoSphere Streams software

Additional Resources

- [Reference Architecture](#)
- [Seller Presentation](#)
- [Client Presentation](#)
- [Sales Kit](#)

IBM System x Reference Architecture for SAS Visual Analytics

Offer Type

Reference Architecture

Business Challenge

- Need to explore massive amounts of data rapidly to identify trends
- SAS clients seeking greater performance
- Need to accelerate time to value with faster ordering and quicker deployment

Solution Summary

Expansion of big data platform to run with SAS® Visual Analytics Explorer 6.1, using x3550 M4 based reference architecture. Uses the new SAS® LASR™ Analytics Server software. System x provides performance capabilities for in-memory processing of SAS® LASR™ Analytics Server with Hadoop integration. There are reference architecture deployment options available for single-server and distributed environments. The x3550 M4 reference architecture rack clusters facilitate parallel processing environments for cost-effective scaling-out as client needs dictate. This solution provides industry leading analytics with unique in-memory architecture, data exploration, Hadoop support/integration, & information-delivery options, including web and mobile devices such as iPad

Client Benefits

- On-the-fly data analytics (minutes or even seconds) with ability to share via Web and mobile devices
- Self-service, ad hoc data visualization environment to explore data independent of IT
- Easily integrated with Hadoop for performance optimization and scalability

Additional Resources

- [Client Presentation](#)
- [Solution Brief](#)
- [Sales Kit](#)

Microsoft Fast Track Data Warehouse for SQL Server 2012 on System X

Offer Type

Reference Architecture

Business Challenge

- Inability to analyze data to make critical business decisions.
- Ability to provide the right data warehouse solution in a timely manner.
- Provide a data warehouse solution that is reliable with the performance to handle exponential data growth.

Solution Summary

Working closely with Microsoft, IBM provides a highly reliable, scalable solution based on the x3550 M4, x3650 M4 and x3850 X5 optimized for Microsoft SQL Server 2012. This solution provides faster time to value and the right performance and scalability for data warehousing.

Client Benefits

- Accelerate data warehouse roadmap with pretested hardware configurations.
- Virtually eliminate hardware testing and reduce tuning with better data warehouse performance.
- IBM provides the performance, reliability and scalability to provide businesses w/ solutions that will benefit them now and grow as needed

Additional Resources

- Basic 8TB to 24 TB [Brochure Reference Architecture](#)
- Standard 20TB to 60TB [Brochure Reference Architecture](#)
- Advanced 40TB to 112TB [Brochure Reference Architecture](#)

IBM Smart Analytics 5600 R3

Offer Type

Reference Architecture

Business Challenge

- Need for powerful analytics capabilities and growth flexibility
- Lack of expertise/time to optimize software
- Need operational analytic capabilities that will deliver rapid & compelling return on investment now, & can grow to meet new demands
- Need to enable an environment with the flexibility to quickly meet demand without disrupting the free-flow of decision support intelligence

Solution Summary

Fully integrated, cost-effective solution for quick deployment of operational analytics capabilities on a powerful warehousing foundation. The x3650 M4 server provides an energy-efficient design with a scalable 2U package that's easy to service & manage, and the DS3500 Storage solution provides affordable storage without sacrificing scalability or ease of use.

Client Benefits

- Faster time to value: Business ready from months to days. BI reporting, analysis, dashboards, data mining, cubing services, and text analytics
- Fast answers to business questions: Underlying InfoSphere Warehouse 10.1 for industry-leading efficiency in collating multiple data formats, resulting in a 3x¹ or more performance improvement for standard star-schema business intelligence queries
- Improved efficiencies: Solid State Drive (SSD) technology for improved response time & efficiency due to reduced storage latencies & I/O bottlenecks

Additional Resources

- [Reference Architecture](#)

Data Management Solutions

IBM System x® Reference Architecture for Microsoft SQL Server

Offer Type

Reference Architecture

Business Challenge

- Need for a cost-effective SQL Server consolidation/data warehouse solution for disparate workloads
- Help with virtualization of SQL Server across physical/virtual infrastructure
- Need for a highly available configuration that ensures reliability, performance, scalability

Solution Summary

Highly available, redundant SQL Server consolidation/data warehouse solution for departmental, retail and branch offices on x3650 M4 and x3630 M4. This entry-level solution enables clients to consolidate multiple workloads on a System x rack solution with IBM servers, Juniper switches, & IBM, Microsoft and Sanbolic Melio software. This solution also provides virtualization flexibility on the operating system, storage & application layers, plus scalability on 2 dimensions – both compute and storage

Client Benefits

- Flexible, affordable and easy-to-use x3650 M4 rack solution with pay-as-you-grow design to help lower costs and manage risks
- x3630 M4 offers high performance & maximum storage capacity
- Capable of spanning multiple storage nodes & mirroring data for availability
- Dynamically expandable active-active resources, allowing all database consolidation on a single volume with db-level QoS management
- Application layer virtualization for distribution of SQL databases/instances across all physical or virtual SQL Servers based on policy

Additional Resources

- [Seller Presentation](#)
- [Client Presentation](#)
- [Reference Architecture](#)

High Performance Computing

IBM System x GPFS™ Storage Server (GSS)

Offer Type

Integrated Solution

Business Challenge

- Need for high capacity, high value solutions for HPC workloads
- Classical RAID techniques don't scale
- Distance from data limits analytics
- Need for integrated solution with data integrity and high performance

Solution Summary

IBM System x GPFS Storage Server (GSS) is a new high capacity, high performance, building block storage solution based on GPFS software & fulfilled through the Intelligent Cluster portfolio as an integrated & tested solution. This is an entirely Blue-on-Blue solution, built on standard System x components with GPFS software tuned to support this configuration using two x3650 M4 servers combined with either four or six JBODs, with up to 348 disk drives. GSS is easy to configure and buy. It offers great performance and scalability for clients, with no storage controllers.

Client Benefits

- Single integrated, fully supported IBM solution
- Leverages strong GPFS software market
- High capacity – up to 1PB of storage per block
- Scalable building-block approach to increase performance & capacity
- No storage controllers – data resides closer to compute nodes for faster disk rebuild time
- Up to 400% faster for complete disk rebuild time, 20x faster for Critical Data Rebuild
- Industry-leading throughput using efficient De-Clustered RAID techniques
- Enhanced data protection & extreme data integrity

Additional Resources

- [Seller Presentation](#)
- [Client Presentation](#)

Business Continuity Solutions

IBM System x Reliability Solution for Stratus everRun Enterprise

Offer Type

Reference Architecture

Business Challenge

- Rising cost of downtime & data loss
- Need always-on availability for business critical applications
- Data loss
- Lack of business continuity and/or disaster recovery plan

Solution Summary

IBM System x Reliability Solution for Stratus everRun Enterprise combines industry-leading downtime prevention software from Stratus on extremely reliable System x servers. The solution mirrors data across two identical servers so that no data loss or downtime occurs. This solution uses two x3650 M4 or two x3550 M4 or two x3250 M5 System x servers.

Client Benefits

- Downtime prevention rather than mere recovery
- 24/7 Software Support
- Optional Disaster recovery protection
- Centralized click-and-go management tools
- Outstanding reliability & availability of System x servers

Additional Resources

- [Seller Presentation](#)
- [Client Presentation](#)
- [Reference Architecture](#)
- [Solution Brief](#)
- [Whitepaper](#)