



Dynamics AX Outsourcing Experts

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OneNeck provides a **comprehensive, flexible** suite of outsourcing solutions designed specifically for mid-market companies

- Founded in 1997
- Supports over 50 customers at over 850 sites worldwide
- 99% Contract Renewal Rate exceeding the industry average of 85%
- Primary data center/support center operations in Phoenix and Houston
- 100% US based operations and employees
- Diverse staff of Dynamics AX certified professionals
- Average of 99.9% systems availability
- Supports multi-site deployments for two of the largest hosted Dynamics AX environments in North America
- Ranked #1 ERP Outsourcing Vendor by the Black Book of Outsourcing

Architecting Right-sized Infrastructure Solutions for Your AX Environment

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Topics

- Dynamics AX
- Deployment Considerations
- Determining the “Right” Solution
- Summary

Topics

- Dynamics AX
 - ✓ Basic Requirements
 - ✓ Server Deployment Options
 - ✓ Client Deployment options
- Deployment Considerations
- Determining the “Right” Solution
- Summary

Basic Design Requirements

- System
 - ✓ 4 distinct components of Dynamics AX
 - Database
 - Application Server
 - AOS
 - Client Application
- Network
 - ✓ Interconnectivity between components
 - Minimum 100 Mbps speed
 - Less than 5ms latency
 - Includes client to AOS communications

Server Deployment Options

- Minimal server configuration
 - ✓ Database server
 - ✓ AOS/Application server
- Clustered Database server
 - ✓ Highly available database
- Clustered Application server
 - ✓ Highly available application server
- Clustered AOS
 - ✓ Highly available
 - ✓ Load balanced
 - ✓ Can be scaled
- Special purpose servers
 - ✓ Batch server
 - ✓ Enterprise Portal
 - ✓ Other third-party integrations

Client Deployment Options

- Full client at the desktop
 - ✓ Loaded on existing end-user workstations
- Thin client services
 - ✓ Centralized administration and security
 - ✓ Total control of user experience
 - ✓ Support for CE-based terminals
 - ✓ Support for alternate client operating systems

Topics

- Dynamics AX
- Deployment Considerations
 - ✓ Environment Sizing
 - ✓ Database Server Deployment
 - ✓ Application Server Deployment
 - ✓ AOS Deployment
 - ✓ Client Deployment
 - ✓ Network
- Determining the “Right” Solution
- Summary

Environment Sizing Considerations

- What is the expected load?
 - ✓ Typical user load (type and quantity)
 - ✓ Typical transactional load
 - ✓ Batch processing requirements
 - ✓ Month and year-end activities
 - ✓ Peak season activities
- What are my availability requirements?
 - ✓ Multiple production time regions for international organizations
 - ✓ 24x7 production operations in many manufacturing organizations
 - ✓ Government/External regulations

Database Server Deployment Considerations

- Sized based on
 - ✓ Expected load
 - ✓ Database size and growth rate
 - ✓ Availability requirements
- Single database server
 - ✓ Not highly available
- Clustered database server
 - ✓ Requires advanced hardware design
 - ✓ Highly available active-passive system
- Database support
 - ✓ Oracle 10g 32 or 64 bit on both Windows and UNIX
 - Future versions will not support Oracle on UNIX
 - ✓ SQL 2000 and 2005
 - Supports 64 bit SQL 2005

Application Server Deployment Considerations

- Sized based on environment requirements
- Single application server
 - ✓ Low cost solution
 - ✓ AOS may also be installed on same server
 - ✓ Not highly available
- Application server as a cluster resource
 - ✓ Requires advanced hardware design
 - ✓ Highly available active-passive system
- Application server on a NAS
 - ✓ Any CIFS-based share
 - ✓ Redundancy is a function of the appliance

AOS Deployment Considerations

- Sized based on number of users/type of user load
- Single server AOS
 - ✓ Low cost solution
 - ✓ Application server may also be installed on same server
 - ✓ No redundancy
 - ✓ Limited growth
- Multiple server AOS
 - ✓ Typically includes separate application server
 - ✓ Additional servers can be added to accommodate additional load
 - ✓ Redundancy can be achieved through N+1 methodology

Client Deployment Considerations

- Basic environment sizing requirement
 - ✓ All Components require 100 Mbps and <5ms latency
- Network technology realities
 - ✓ LANs can be up to 1Gbps and under 1ms latency
 - ✓ WANs are typically up to 3Mbps and usually >30ms latency
- Client system deployment realities
 - ✓ Client can be deployed on the desktop in single LAN environments
 - ✓ Client must be deployed with thin client services
 - In WAN environments
 - When thin terminals are used
 - When alternate client operating systems are used
 - ✓ Thin client services deployment considerations
 - Licensing requirements
 - User-per-server performance
 - Server redundancy through N+1 methodology

Network Deployment Considerations

- Thin client servers have established bandwidth requirements
 - ✓ Printing within thin client sessions is not included in basic calculations
- The datacenter circuit size is NOT the sum of the remote circuit sizes
- ERP traffic is not the only data on the network
- Global user dispersion
 - ✓ Can reduce the datacenter side circuit requirements
 - ✓ Not every site is at work at the same time
 - ✓ Overlap exists from The US West Coast to Asia/Australia, etc
 - ✓ Overlap exists from Europe to US East Coast
 - ✓ Causes a greater demand for availability
- Accelerators can reduce WAN bandwidth requirements

Topics

- Dynamics AX
- Deployment Considerations
- Determining the “Right” Solution
 - ✓ Basic Server Deployment
 - ✓ Load Balanced AOS Server Deployment
 - ✓ Clustered Deployment
 - ✓ Server Virtualization
 - ✓ Multiple Datacenters
 - ✓ Traditional WAN services
 - ✓ Internet VPN solutions
 - ✓ Traditional WAN with VPN failover
 - ✓ WAN Acceleration technology
- Summary

Basic Server Deployment

- Single database server
- AOS and application on the same server
- Thin client services for remote users
- Pros
 - ✓ Lowest cost solution
 - ✓ Less to manage
- Cons
 - ✓ Not redundant
 - ✓ Not highly available
 - ✓ Not scalable
 - ✓ Limited deployment growth
- Why?

Clustered AOS Deployment

- Database, application and AOS separated
- AOS deployed through AOS clustering services
- Thin client services for remote users
- Pros
 - ✓ Supports increased client load
 - ✓ Additional AOS hardware can be easily added
 - ✓ AOS redundancy can be addressed through N+1 deployment
- Cons
 - ✓ Increased costs for multiple servers
 - ✓ Increased administrative load
 - ✓ No database server redundancy
 - ✓ No application server redundancy
- Why?

Fully Clustered Deployment

- Redundant database server hardware
- Redundant application server hardware
- AOS deployed through AOS clustering services
- Thin client services for remote users
- Pros
 - ✓ Supports increased client load
 - ✓ Additional AOS hardware can be easily added
 - ✓ AOS redundancy can be addressed through N+1 deployment
 - ✓ Database server is highly available
 - ✓ Application server is highly available
- Cons
 - ✓ Most expensive and complex environment to implement
 - ✓ Require knowledgeable staff to implement and manage
- Why?

Server Virtualization

- System components run on virtual hardware platforms
- Pros
 - ✓ Virtual server is not dependant on physical server hardware
 - ✓ Reduction in hardware cost
 - ✓ Can be moved from host to host almost without a disruption in service
 - ✓ Can be restored rapidly to geographically disperse locations
 - ✓ Provides new alternatives for DR and mirrored datacenter operations
- Cons
 - ✓ Host servers tend to be very large systems
 - ✓ Virtualization requires knowledgeable staff to implement and manage
 - ✓ Subject to software vendor support of the technology
- Why?

Multiple Datacenters

- Cold DR site
 - ✓ Provide for multiple potential restore locations
 - ✓ Require major restore activities
- Warm DR site
 - ✓ Provides a location with servers running, waiting for activation
 - ✓ Requires restore of data to last good backup
 - ✓ Less restore activities than cold DR
- Hot DR site
 - ✓ Provides secondary location for access to systems
 - ✓ Provides almost instantaneous access to standby systems
 - ✓ Requires avenue for inter-site data replication
 - ✓ Requires investment in standby platform
- Follow-the-sun datacenters
 - ✓ Provide local access to regionally customized systems
 - ✓ Provide hot DR function for other regions
 - ✓ Requires significant investment in facilities and hardware
- Why?

Traditional WAN services

- Point-to-point
 - ✓ Traditionally hub-and-spoke topology
 - ✓ Expensive hardware
 - ✓ Expensive fixed circuits
 - ✓ Not easily scalable
- Frame Relay, ATM, etc
 - ✓ Traditionally hub-and-spoke topology
 - ✓ Expensive to add DR site or mesh topology
- MPLS
 - ✓ Fully meshed topology
 - ✓ Scales easily
 - ✓ Can add DR site easily
 - ✓ Can use QoS to prioritize traffic
- All technologies
 - ✓ Dedicated or guaranteed bandwidth
 - ✓ The larger the network the more complex
 - ✓ Susceptible to failures in the service provider network
- Why?

Internet VPN solutions

- Sites can tolerate minor network outages
- Pros
 - ✓ Low cost alternative to WANs
- Cons
 - ✓ Not redundant
 - ✓ Dependant on Internet availability (No SLA)
 - ✓ No ability to prioritize traffic (QoS)
 - ✓ Susceptible to failures in the service provider network
 - ✓ Not all countries have invested in a reliable Internet infrastructure
 - ✓ Requires specialized VPN hardware
 - ✓ Requires skilled resources to implement and manage
- Why?

Traditional WAN with VPN failover

- Leverage Traditional WAN for primary connection
- Uses Internet for VPN failover
- Pros
 - ✓ Redundant paths to critical applications
 - ✓ Can use local Internet pipe to keep Internet traffic off the WAN
- Cons
 - ✓ More expensive option (sum of other two options)
 - ✓ Requires higher-level resources to deploy and support
- Why?

WAN Acceleration technology

- Optimize WAN utilization by modifying traffic to efficiently fill the WAN pipe
- Optimize TCP Traffic flows by reducing WAN traffic for “chatty” applications
- Have shown from 2:1 to 100:1 compressions ratios
- Compress and remove repetitive data on the WAN
- Pros
 - ✓ Can increase performance for remote users
 - ✓ Can decrease bandwidth requirements (monthly recurring costs)
 - ✓ Can be implemented on VPN only solutions
 - ✓ Works along with QoS to optimize critical application traffic
- Cons
 - ✓ Initial hardware and installation costs
 - ✓ Higher ongoing management costs
- Why?

Topics

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- Summary
 - ✓ Questions/Comments

Summary

- Dynamics AX requires high speed connectivity between components
 - ✓ WANs do not support this requirement
 - ✓ Thin client services are required for WANs
- Systems are sized based on load and availability requirements
 - ✓ Basic design based on loading
 - ✓ Advanced design includes availability
- The more reliable and available the system, the more complex
 - ✓ Cluster services
 - ✓ Networking
- Virtualization adds a layer of flexibility (and complexity) in design
 - ✓ Mobile guest OS
 - ✓ DR options
 - ✓ Software vendor support of virtualization

Q&A

- Question/Comments