

AAR soars to higher performance and efficiency with HP Integrity blades and HP-UX 11i v3



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Jim Gross, Director of IT Operations, AAR Corporation



HP customer case study: HP Integrity blades and HP-UX 11i v3

Industry: aeronautics

Objective

- Provide business units and employees with more reliable and responsive IT services
- Consolidate data center infrastructure to support growth and reduce power demand
- Improve infrastructure stability and performance
- Simplify administration

Approach

- Deploy HP BladeSystem c-Class Enclosure with HP Integrity BL860c server blades running HP-UX 11i v3 and HP ProLiant BL460c server blade running Microsoft ® Windows ® Server 2003
- Implement HP Virtual Connect

Business technology improvements

- Doubled transactions per minute for employee portal application
- Improved system availability and reliability
- Reduced server demand by 50 percent, supporting increased workloads
- Reduced system management time and cost

Business outcomes

- Improved responsiveness and accessibility of business information
- Ensured greater availability of critical business applications
- Increased business agility to grow while optimizing power efficiency
- Reduced total cost of ownership



Meeting critical aviation needs for quality and safety AAR has more than a half-century of experience serving the needs of its commercial airline and government defense customers with a wide range of aviation/aerospace products and value-added services. Whether ensuring that the right engine parts are delivered on time, referencing the most current technical data for overhauling landing gear, or managing the logistics of aircraft storage, it is of paramount importance that employees have reliable, consistent access to relevant information and applications.

To deliver that information and ensure quality and safety throughout the aviation supply chain, AAR relies on more than 35 production Oracle databases running across a range of HP servers. However, as the company grew dramatically in recent years, data center space and energy resources were becoming

strained. In addition, several critical applications were experiencing performance problems. To address these issues, AAR explored new technologies that would facilitate consolidation while boosting application performance. And after carefully evaluating offerings from HP, IBM, and Sun, AAR selected HP Integrity server blades running HP-UX 11i v3.

Proving the solution for critical Oracle databases

AAR initially chose Integrity blades and HP-UX 11i v3 to run three of its critical application areas—Oracle Enterprise Manager, which manages all the company's Oracle databases and applications; AAR's Maintenance, Repair & Overhaul business unit, which performs a full range of maintenance services that keep its customers' aircraft flying safely; and the corporate employee portal, an Oracle-based portal for everything from employee benefits information, to internal communications and help desk, to corporate travel services.

Oracle Enterprise Manager is widely used by AAR's administrators to monitor the company's entire database environment and proactively resolve issues before they affect the business. Because of the critical nature of this application, the infrastructure supporting it had to be highly available with room for growth.

Previously, AAR ran Oracle Enterprise Manager in a shared server environment using a partitioned HP 9000 rp3440 server with HP-UX 11i v2. To achieve the levels of availability and scalability needed in this growing environment, the company moved Oracle Enterprise Manager onto a dedicated HP Integrity BL860c server blade with HP-UX 11i v3. This freed up computing resources on the rp3440 to support other applications, while providing Oracle Enterprise Manager with a highly stable, efficient, and cost-effective platform.

"All the critical functions of AAR and its business units are supported by the databases monitored through Oracle Enterprise Manager," explains Jim Gross, Director of IT Operations at AAR. "This includes financials, supply chain, structures and systems—essential business applications that need to be monitored at all times. If there's a bottleneck in the supply chain database, for example, that could cause serious performance issues for our business users. So we need to be on top of those types of issues at all times. We've found that the Integrity blade with HP-UX 11i v3 stands up extremely well to these demands. Oracle's licensing costs are also lower on the Integrity blade than on our HP 9000 system. So it's not only giving us a more stable and reliable platform, but also saving us money at the same time."

Boosting IT performance and user satisfaction

Deploying the Integrity blade for Oracle Enterprise Manager provided AAR with a "proof of concept"—allowing the company to gain experience with the new platform in a technical environment before introducing blades to its business environments. With the success of this first deployment, AAR was confident in expanding the use of Integrity blades to its Maintenance, Repair & Overhaul (MRO) business to run an internally developed application called StAAR™. This Oracle-based application is used by the company's aircraft mechanics for time and labor reporting, as well as collections.

"Our MRO division is growing very quickly, and they maintain operations around the clock," says Gross. "We had been running StAAR on an older HP 9000 system that was nearing end of life. We recognized Integrity as the next generation of server technology and saw blades as the wave of the future. So it made perfect sense to move StAAR onto Integrity blades. We've since seen a significant improvement in application performance and the platform has proven to meet our 24/7 operating demands."

The third major area now supported by Integrity blades and HP-UX 11i v3 is AAR's employee portal, "myAAR." This Oracle portal previously ran on a two-tiered configuration consisting of Sun Solaris and Linux servers. As the portal grew to become an integral part of everyday business at AAR, its performance became sluggish due to the limitations of the two-tiered platform. By consolidating myAAR on Integrity blades and HP-UX 11i v3, employees have since seen portal responsiveness improve dramatically, while AAR's IT organization enjoys the benefits of a much simpler, more manageable infrastructure.

"With Integrity blades and HP-UX 11i v3, we've gone from having four stand-alone servers and a mixed operating environment to just two blades and a single operating environment," reports Gross. "The blades now occupy a fraction of the data center space, and standardizing on HP-UX 11i across our environment has made it much easier and more cost-effective to administer our systems. Most important, we've been able to make our employees much happier by boosting the performance of the portal. In fact, since moving to the Integrity blades, we've more than doubled the transactions per minute compared to the old Sun system."

Slashing power demand

Space and power savings have been among the most significant outcomes AAR has realized by deploying blades. Flexibility, scalability, and administrative efficiency also rank high in terms of value. All of these

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benefits are made possible by housing the blades in an HP BladeSystem—an optimized “infrastructure in a box” that consolidates blade, storage, network, and power resources in a compact unit.

“With the BladeSystem, we’ve reduced our footprint and freed up a lot more room for growth in our data center,” says Gross. “The most dramatic savings, though, is in power. A single traditional server uses as much power as an entire BladeSystem loaded up with 16 half-height blades. With the amount of growth we’re seeing at AAR, our power resources wouldn’t have been able to keep up if we were still adding stand-alone servers.”

The increased utilization achieved with Integrity blades and HP-UX 11i v3 also enables AAR to do more with less. “Before, our systems were running around 75–80 percent utilized,” adds Gross. “Now, with Integrity blades, they’re down to about 35–40 percent utilized—and it’s the same workload. So we’ve gained future capacity, if needed, just by replacing our servers with blades. And if we ever need to grow further, HP has the technology that lets us daisy chain the BladeSystems together and scale out that way. It gives us the ability to support growth in the business very efficiently, without straining our power or our administrators.”

Simplifying administration while supporting growth

Administration has been simplified in several ways, thanks to BladeSystem technology and the HP-UX 11i v3 operating environment.

One HP innovation that helps AAR simplify administration is Virtual Connect technology. HP Virtual Connect eliminates excess cabling and the management overhead of switches by virtualizing

I/O right at the server edge. That way, the blades are managed as a pool of resources. Adding or replacing individual blades can be done on-the-fly without disrupting operations, also improving overall system availability.

“Virtual Connect has helped us reduce management time significantly,” notes Gross. “It allows us to manage the blades from anywhere, even home,

Customer solution at a glance

Primary applications:

- Oracle Enterprise Manager for all Oracle databases and applications
- StAAR™ time and labor management for AAR’s Maintenance, Repair & Overhaul business unit
- Oracle Forms for the “myAAR” employee portal
- Microsoft Exchange
- VMware

Primary hardware:

- HP Integrity BL860c server blades
- HP ProLiant BL460c server blade
- HP BladeSystem c-Class Enclosure
- HP Integrity rx6600 Servers
- HP StorageWorks Enterprise Virtual Array (EVA)

Primary software:

- HP-UX 11i v3
- HP Virtual Connect
- Oracle Database

HP Services:

- HP Critical Support

which saves a lot of time and allows us to keep the business running more smoothly. And the value of Virtual Connect increases as we add blades and BladeSystems because we can manage everything through this single interface.”

New capabilities provided in HP-UX 11i v3 also help AAR simplify administration and improve IT service levels for the business—in particular, the high availability and security features that are built into the operating environment.

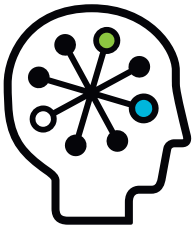
“We have found the high availability capabilities of HP-UX 11i v3 to be significantly enhanced, particularly the failover and pathing software,” says Gross. “It’s all built in, so there’s no need for separate software. 11i v3 also provides many more options for failover and makes it much easier to administer. There’s also no need to take down the system to administer the failover software as before, which increases the availability of our applications. And with the OpenSSL features, we’ve been able to protect data across our environment more easily, and avoid security problems that could disrupt business. All of this allows us to keep the business running more smoothly and productively.”

Leveraging HP technologies and services across the data center

Across the board, AAR is continuing to build its relationship with HP to enhance its business operations. Currently, AAR has deployed one ProLiant blade to run HP Systems Insight Manager as a proof-of-concept. The company also uses HP StorageWorks Enterprise Virtual Array (EVA) systems to support the large quantity of data across all of its business-critical applications, including Oracle, Exchange, and VMware. Why? As Jim Gross puts it: “We like the EVA because of cost and ease of use—you don’t have to

be a rocket scientist to manage it. So that allows our administrators to spend more time on other tasks that add direct value to the business.”

AAR also relies on HP Services for Critical Support and the added value HP Services professionals offer. “Not only are they reactive with the 6-hour call-to-repair guarantee, they’re proactive in terms of planning maintenance and firmware updates, or providing best practices,” says Gross. “And we appreciate how HP Services comes in and just helps us out with overall general guidelines for us to follow to make sure that we’re running our environment in the best way possible.”



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