Hosted Network Solutions (HNS)

Infrastructure as a Service

jack henry™

contents

business agility and availability

Has your financial institution (FI) found it challenging to keep pace with the latest technological advancements, regulatory compliance directives, and accountholder service demands? If so, you are not alone.

With Gladiator Hosted Network Solutions™ (HNS) from Jack Henry, you can seamlessly move your IT infrastructure to the cloud to leverage its many benefits and ensure availability of your most critical applications. By moving your infrastructure to a secure, private cloud and transferring management responsibilities to experienced advisers and engineers who understand your business, your internal resources can focus on more strategic initiatives that leverage your core competencies in serving your accountholders while simultaneously lowering your risk profile.

HNS offers Infrastructure as a Service (IaaS) optimized for financial institutions. Operating on enterprise class hardware in Jack Henry data centers provides a solution that not only addresses your computing and networking needs, but also enhances resiliency by following a Disaster Avoidance (DA) methodology. Nearly 200 financial institutions have chosen Jack Henry's private cloud to host their IT infrastructure. By leveraging HNS, institutions have achieved improved availability and agility, while controlling expenses.

At Jack Henry, we take a customized approach that involves understanding the unique needs of your financial institution and matching the service accordingly. Whether you only need a couple of servers hosted or have an entire data center with virtual desktops and aging infrastructure, we can provide the necessary architectural flexibility to develop a customized cloud migration strategy to help you achieve your business objectives. Our clients tell us that moving to HNS has been one of the best decisions they have made, and they wish they had moved sooner.

Nearly 200 financial institutions have chosen Jack Henry's private cloud to host their IT infrastructure.

network connectivity

In today's interconnected world, one of the most critical components of enterprise architecture involves network connectivity. At the end of the day, what good is a fully redundant enterprise class data center if you are unable to communicate with it? At Jack Henry, connectivity options to HNS generally fall under two categories:

- Connect using existing WAN (MPLS, Metro-E, SD-WAN, DMVPN, etc.)
- Connect using Jack Henry's Network as a Service (NaaS) solution

Many institutions connect to HNS by extending their existing WAN. We achieve this by leveraging carrier neutral facilities (CNFs), also known as telco hotels. These are independent data centers that will become new router location(s) for your WAN where we'll cross-connect you into Jack Henry's WAN. From there, your data is "backhauled" into the HNS data

centers. Please see Exhibit A – Connecting with an Existing WAN for a diagram of this configuration.

Jack Henry's NaaS connectivity option has become more common in recent years due to improved internet connectivity across the country. Jack Henry's NaaS solution can support private network circuits as well, such as MPLS; however, there is a strong trend toward more cost-effective internet-connected managed software-defined wide area network (SD-WAN). In addition to lowering data connectivity expenses, leveraging SD-WAN enables direct connectivity to Jack Henry data centers. This eliminates the need to host routers and procure internet in the CNF. Additionally, the resulting simplified network architecture generally improves performance while reducing communication expense. Please see Exhibit B – Connecting with Jack Henry NaaS SD-WAN for a diagram of this configuration optimized for HNS.

server and storage infrastructure

The VMware vSphere server and storage infrastructure used in HNS are enterprise-class products, providing the uptime and redundancy financial institutions need. Each Jack Henry data center maintains equivalent compute and storage capacities to ensure we can run 100% of our systems in either data center without performance degradation at any time.

HNS can host nearly all types of virtual machines, whether Windows-based or Linux-based virtual appliances and servers. To the engineers managing your servers, it feels no different than your servers being in the next room, except that Jack Henry manages and secures the underlying virtualization layer.

Microsoft licensing

HNS includes all required Microsoft SQL and server licenses. We use Microsoft Service Provider Licensing Agreement (SPLA) evergreen licenses, so you always have access to the most recent version.

For any Microsoft licenses not covered under our SPLA program, Office 365 and/or Microsoft 365 provides the rest. Examples of these licenses include email hosting, Microsoft Office, Windows licensing for virtual desktops, and mobile device management.

By hosting your desktops, servers, and core at Jack Henry, you can reduce latency and bandwidth requirements.

virtual desktop infrastructure (VDI)

Most clients hosting servers in HNS choose to host their virtual desktops in HNS as well. We have standardized on VMware Horizon View virtual desktop technology. VDI enhances business continuity and security, streamlines your end users' desktop experience, and improves performance. By hosting your desktops, servers, and core at Jack Henry, you can reduce latency and bandwidth requirements. How are these enhancements achieved?

- **Enhanced Business Continuity** – Provides a consistent desktop experience to end users whether they are at the office or at home. This reduces the overall learning curve and provides agility. VDI allows you to easily transition to remote work or another office.

- **Streamlined Desktop Experience** – Centralizing all desktop applications and configurations within VDI reduces misconfiguration risk across the enterprise. This enables institutions to provide a consistent and controlled desktop environment to employees.
- **Improved Performance** – Hosting virtual desktops in the same data center as your servers reduces latency to optimize client-server performance.
- **Reduced Risk** – VDI sessions are isolated from the PC being used, reducing the risk of issues on the local PC traversing into your hosted environment. This provides a layer of protection when accessing VDI remotely from devices that may or may not be managed by the financial institution (i.e., BYOD). Implementing network access controls enhances security even further by ensuring that remote user PCs meet a baseline security standard before allowing connection.
- **Enhanced Security Posture** – Non-persistent desktops enhance security because each VDI desktop is deleted and rebuilt upon logoff/logon through a recompose process. If an issue occurs, end users only need to log off and log back on to be presented a pristine new VDI desktop. Please refer to Exhibit C – VDI Desktop Recompose Process for a flow diagram detailing the recompose process.

VDI enhances business continuity and security, streamlines your end users' desktop experience, and improves performance.

business continuity and disaster avoidance

Jack Henry follows a Disaster Avoidance (DA) strategy. Approximately every six months, Jack Henry moves all production services between data centers. Unlike a typical Disaster Recovery (DR) exercise, which traditionally employs "bubble tests" that test servers in an isolated manner to simulate a disaster, Jack Henry performs a complete transition of your environment. This ensures that less frequent processes, which may only occur once a month or less, will continue to function as expected during an actual disaster. Jack Henry has automated the migration process to enable staff to focus on the tasks needed to keep your institution running and serve your accountholders. When EASE and Outlink are coupled with HNS, this provides a complete disaster avoidance solution.

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Jack Henry product suite optimization

HNS provides hosting for both Jack Henry core and non-core clients. Although HNS can host almost any application or service, clients with Jack Henry solutions – whether EASE, Express, or Outlink – will see performance improvements.

An additional jConnect™ path to Express and hosted core services provides direct connectivity from HNS. One important note about this path is how it's leveraged with VDI desktops. When an institution hosts virtual desktops within HNS, those desktops can access Express and Core services even if the institution's on-premise locations are unavailable. In short, this additional path provides two benefits: 1) Improved client-server performance between hosted desktops and Jack Henry solutions, and 2) Enhanced Business Continuity by enabling access to your hosted core regardless of on-premise availability. Please see the "HNS jConnect Direct" path located in Exhibits A and B for more detail regarding data flow.

appendix

Exhibit A – Connecting with an Existing WAN

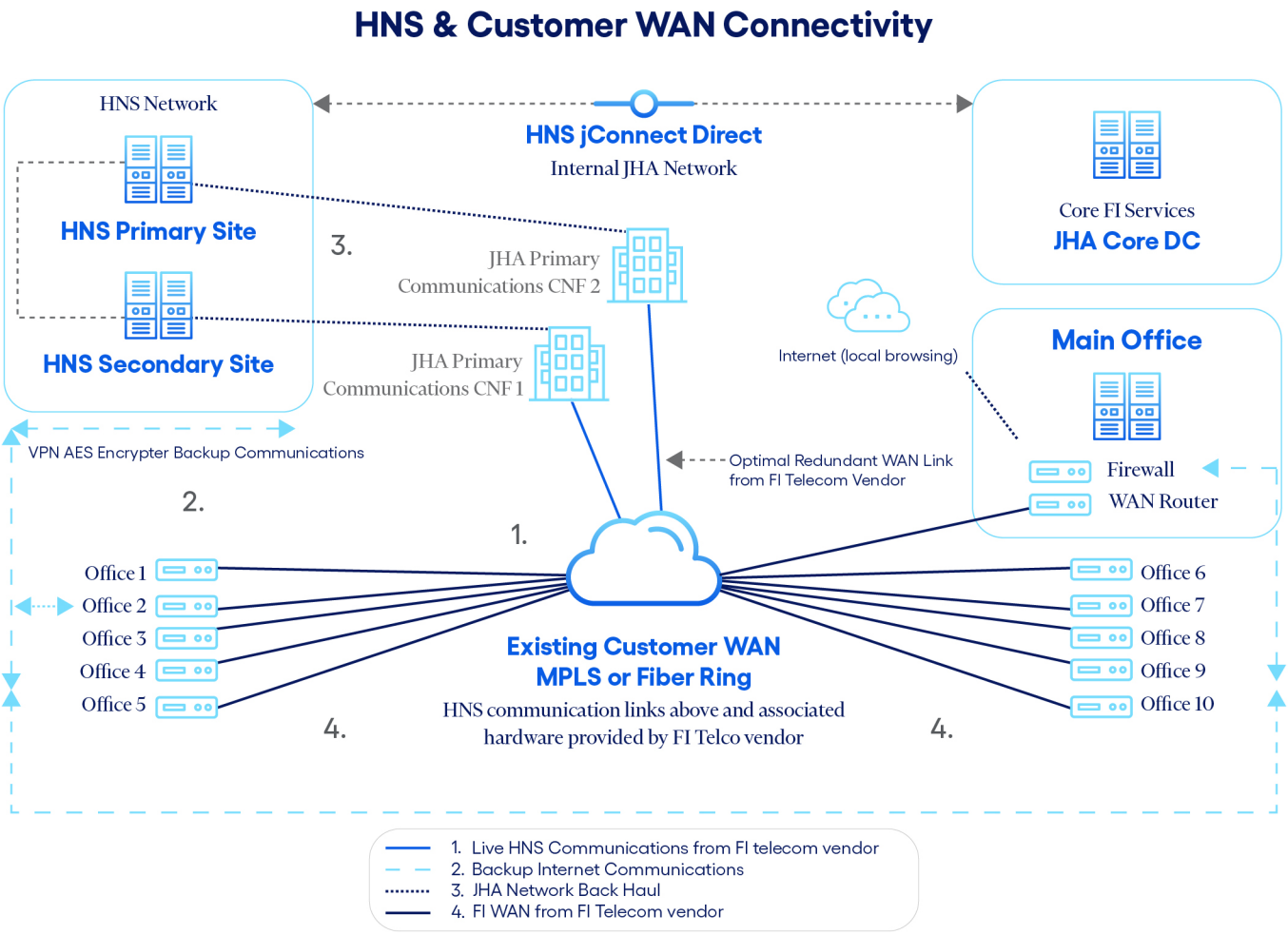


Exhibit B – Connecting with Jack Henry NaaS SD-WAN

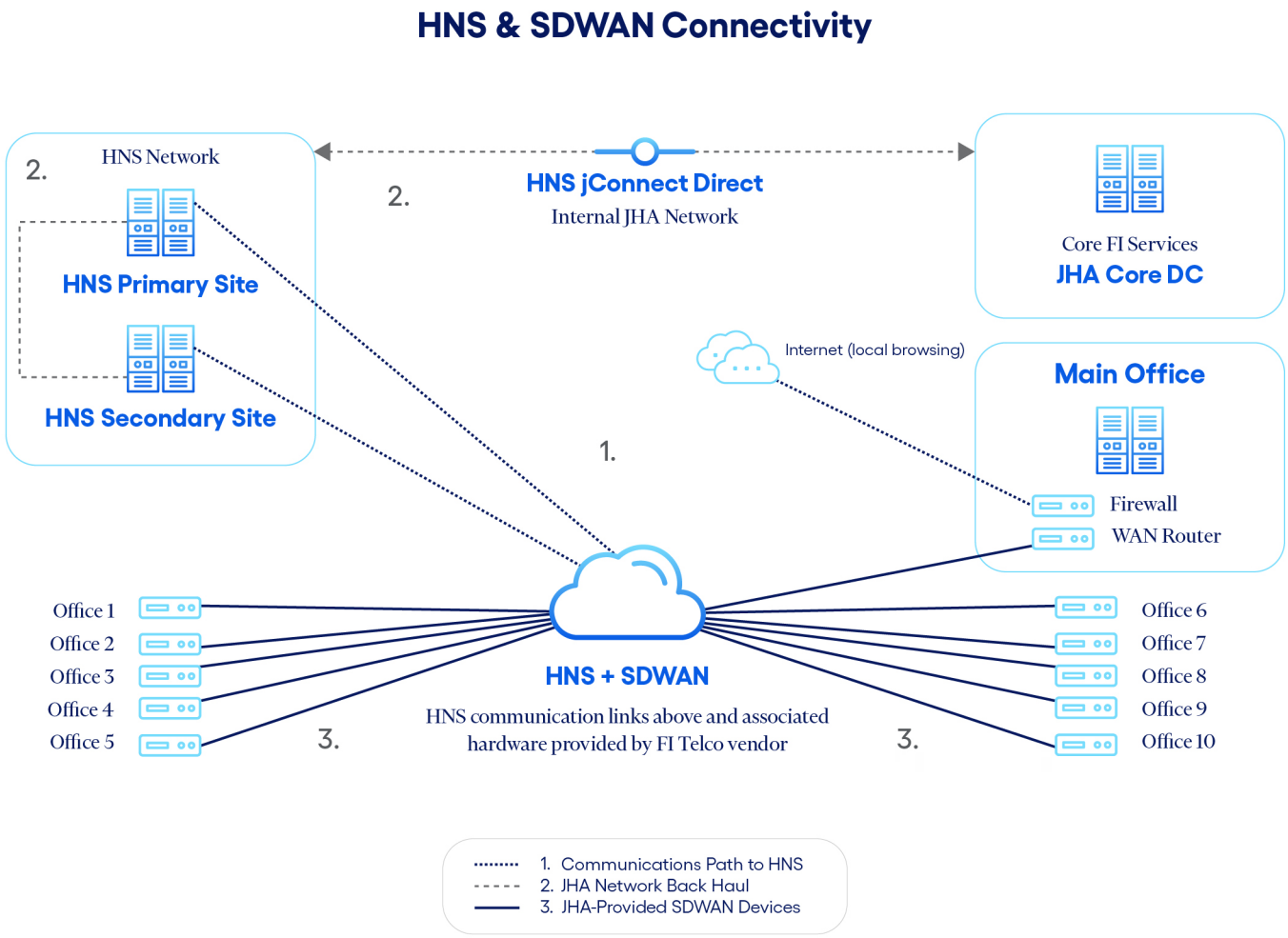
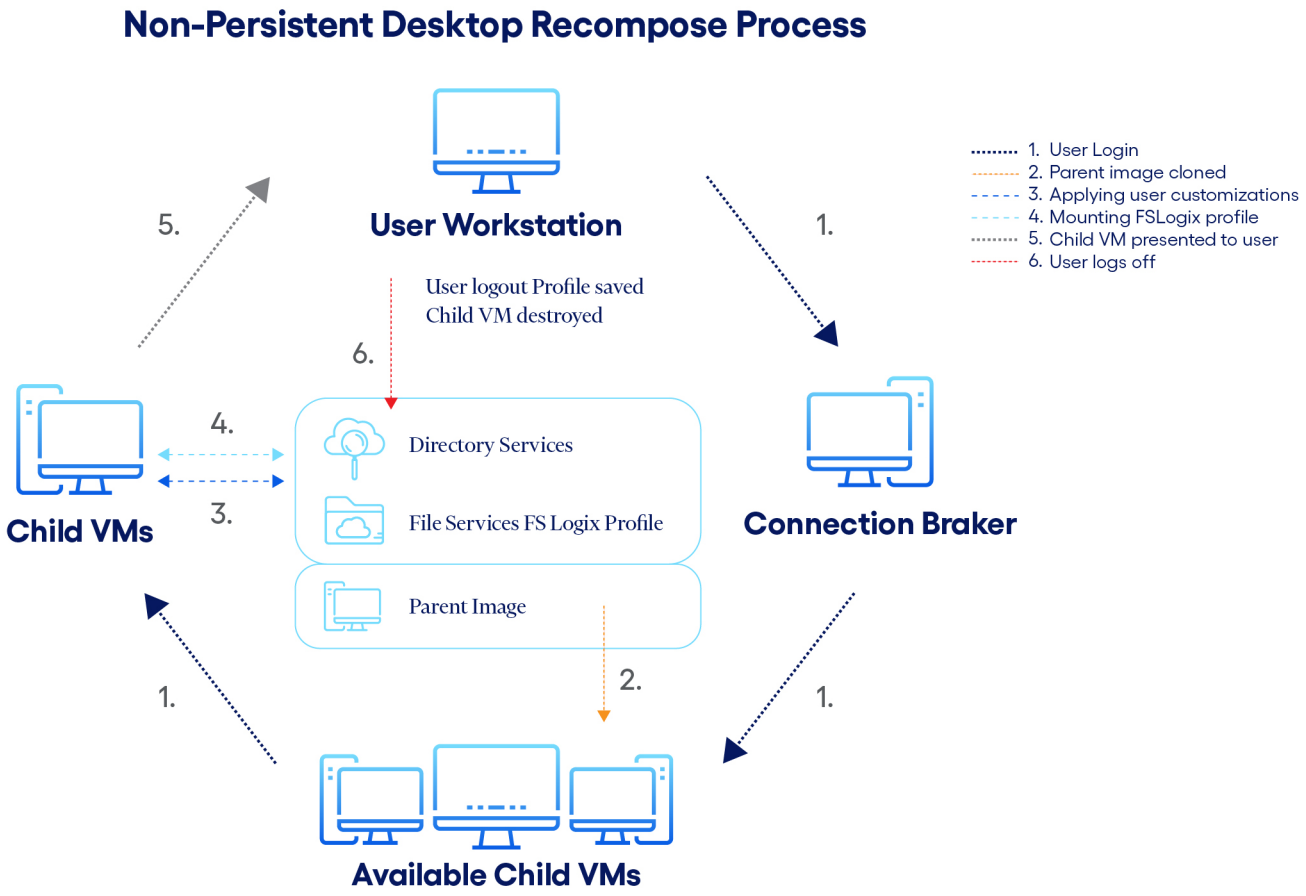


Exhibit C – VDI Desktop Recompose Process



connecting possibilities

Learn more about our infrastructure solutions to gain scalability and accessibility while securing your mission-critical systems and data.

For more information about Jack Henry, visit jackhenry.com.