SOLUTION NOTE

BloxOne™ DDI

SUMMARY

Historically, branch offices and retail locations used local server or router implementations for DDI, or backhauled DNS and DHCP traffic to their enterprise data center. Local server or local router implementations are cumbersome to manage per site, and backhauling is not optimal for reaching cloud-based applications. A virtualized solution offering local DDI services with cloud-based management is the superior option because it ensures application performance and local survivability while centralizing management.

BloxOne DDI

With a micro services-based architecture, BloxOne DDI is the industry's first cloud-managed DDI offering. It moves control and management functions to the cloud, requiring only a lightweight virtual appliance on premises.

Use Cases

Local Survivability for Branch Offices and Remote Sites

When remote sites depend on the link to their headquarters data center business can be interrupted if that link is down.
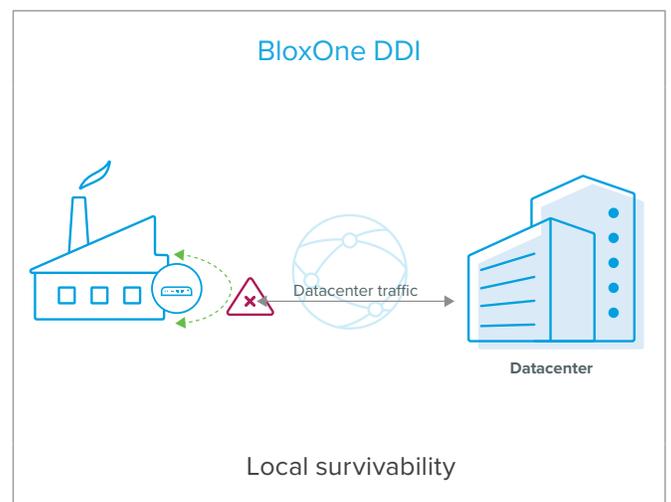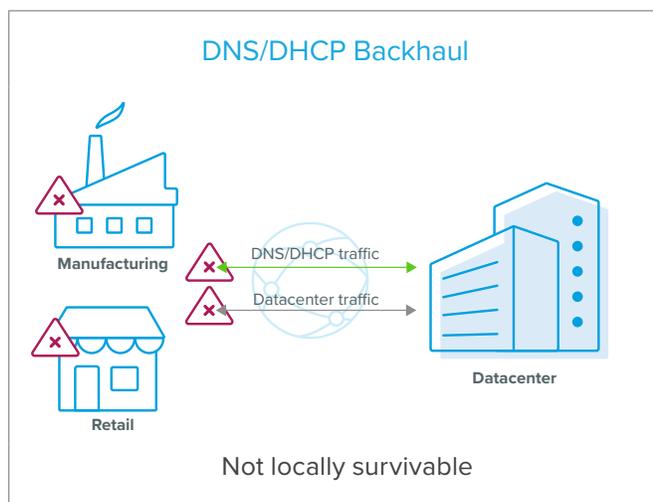

Figure 1: BloxOne DDI provides local survivability to businesses

In DNS/DHCP backhaul architecture, a disaster will disrupt remote operation since they cannot reach their data center for DNS/DHCP resolution. Since BloxOne DDI has local presence with a lightweight form factor, remote sites are no longer dependent on their data center for DNS/DHCP resolution and local operation is not disrupted. Examples of these are manufacturing sites and retail stores.

Branch Office Automation and Integration with Enterprise DDI

In legacy implementations, DNS and DHCP services are deployed at remote locations and branch offices using a local server, router or firewall. Very often this is for cost reasons as enterprise-grade solutions can be cost prohibitive for remote, branch or regional locations.

This leads to a device-centric approach to management. Each site is individually managed. Provisioning, feature upgrades, monitoring and management, and policy control all need to be handled on a per site basis. At scale, this manual approach is cumbersome and error prone with potential site-to-site inconsistencies.

As Figure 2 illustrates, a cloud-managed solution eliminates these issues. Centralized management automates provisioning and applies policies uniformly across all sites. In addition, DNS, DHCP and IP Address management in the branch is integrated with enterprise DDI. The NIOS Grid Connector Feature lets users of the BloxOne Cloud Service Portal view IP addresses from multiple NIOS grids along with BloxOne DDI data, all in a single pane of glass.
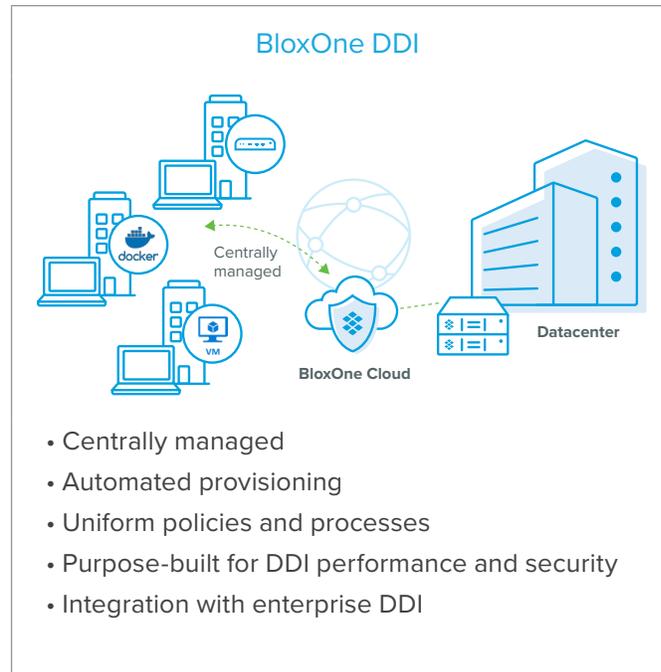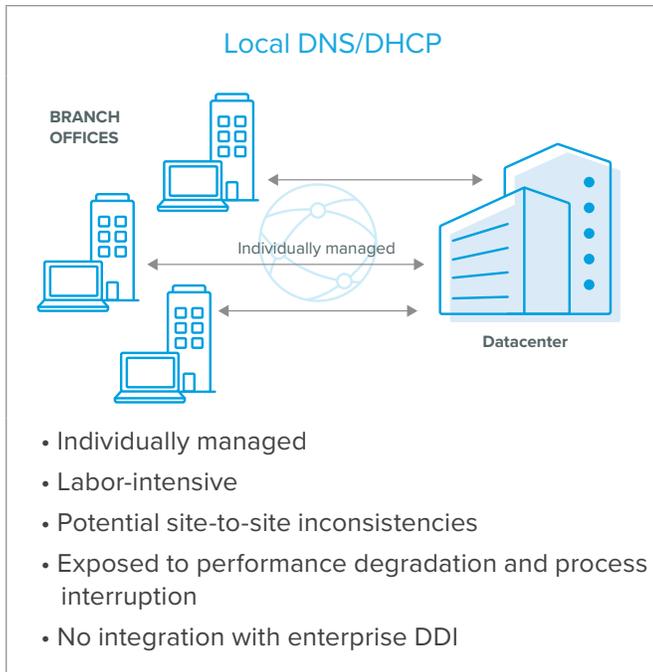

Local DNS/DHCP

BRANCH OFFICES

Individually managed

Datacenter

- Individually managed
- Labor-intensive
- Potential site-to-site inconsistencies
- Exposed to performance degradation and process interruption
- No integration with enterprise DDI

BloxOne DDI

Centrally managed

BloxOne Cloud

Datacenter

- Centrally managed
- Automated provisioning
- Uniform policies and processes
- Purpose-built for DDI performance and security
- Integration with enterprise DDI

Figure 2: Use case: Cloud-managed automation for DHCP services

Optimization for SD-WAN and Cloud-Based Applications

DNS backhaul was originally designed to serve applications hosted in the headquarters data center and does not work for cloud-based applications.
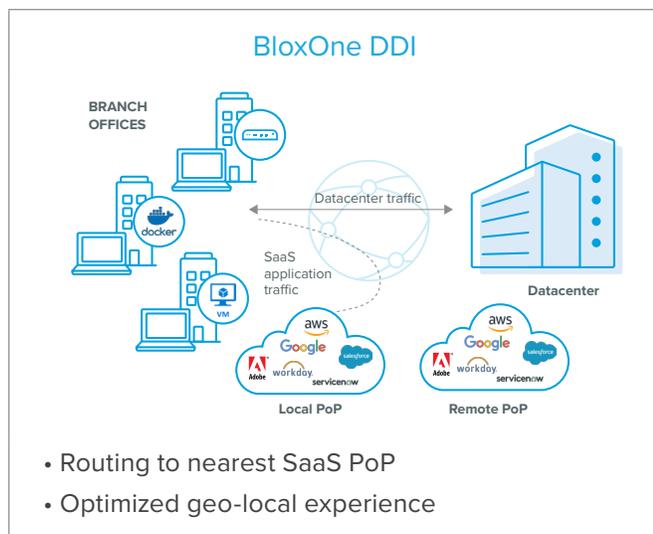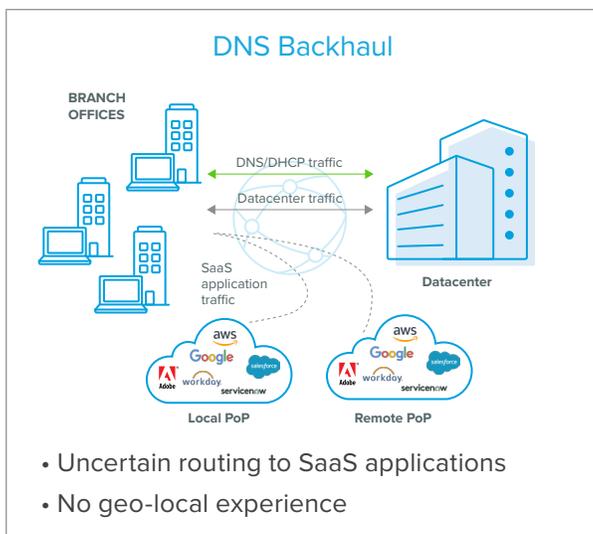

DNS Backhaul

BRANCH OFFICES

DNS/DHCP traffic

Datacenter traffic

SaaS application traffic

aws
Google
Adobe workday servicenow
Local PoP

aws
Google
Adobe workday servicenow
Remote PoP

Datacenter

- Uncertain routing to SaaS applications
- No geo-local experience

BloxOne DDI

BRANCH OFFICES

Datacenter traffic

SaaS application traffic

aws
Google
Adobe workday servicenow
Local PoP

aws
Google
Adobe workday servicenow
Remote PoP

Datacenter

- Routing to nearest SaaS PoP
- Optimized geo-local experience

Figure 3: Use case: DNS services optimized for cloud-based applications

When using DNS backhaul, the end-user is not guaranteed connectivity to the closest point of presence (PoP) for cloud-based applications. The headquarters data center DNS service could resolve to a PoP closer to headquarters than the branch office, resulting in slow application response times for end-users at the branch office. In addition, remote sites depend on the link to the headquarters data center for DNS resolution. If that link is down, business can be interrupted.

BloxOne DDI provides a local presence in a virtual or physical form factor, vastly improving the end-user experience when connecting to such cloud-based applications as Microsoft Office 365. End-users can be assured that they are being served by their local PoP rather than some remote PoP as a result of DNS backhaul. Additionally, the solution is locally survivable and does not depend on the WAN link to their headquarters data center.

Conclusion

Conventional DDI solutions for remote and branch office locations are too slow and cumbersome for an increasingly cloud-first world. BloxOne DDI offers remote sites and branch offices local survivability, improved deployment flexibility through containerization and enables optimized internet access to cloud-based applications. In addition, cloud-based management automates per site provisioning, configuration changes and policy control at scale.

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