



Commsday Presentation IPv6 Challenges

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Agenda



- Beginning Steps for IPv6 Transition
 - The need to obtain a detailed insight of your current network deployment
 - The need to first understand your IPv4 deployment.
 - What Issues do you face?
 - What can you Optimize?

IPv4 Management Issues



- Your address structures
- Integration w/ DNS and DHCP?
- Mapping and reporting?
- Already there are many troublesome issues if this is not already tightly controlled.

IPv6 additional issue



- Longer Addresses means problem has magnified exponentially.
- IPv6 also provides new features and options.
- Fear of the unknown
- Integration and interoperability

IPv6 is an opportunity

- To increase your operational efficiency
- To go get an IPAM tool
 - To put spreadsheet management of IP into the past!
- Establish your business flow and educate your team.
- Be less dependant on individual team members

A well-planned network means a well-planned business



- Reduce transaction times for IP address assignment
- Proper tools enable your team to work together efficiently
- IPv6 Planning will be key to your success and tracking of your customers, and maximizing the benefits of IPv6 address.

Analyze Use of IPv4



- Eliminate fragmentation by using an automated process to identify unused blocks of space
- Control the request IP flow in order to facilitate renumbering of static assignments.
- Use algorithms instead of manual processes.

Viewing 207.0.0.0 to 207.0.15.255 of 207.0.0.0/20 << < 207.0.0.0 Go > >>

Display Options Legend

Mask: 24 Unplanned Free Assigned/Delegated Reserved Mixed Contains multiple Blocks "..." - Mixed Service Types

207.0.0.0/24 Infrastructure	207.0.1.0/24 Data	207.0.2.0/24 Public Exchange	207.0.3.0/24	207.0.4.0/24	207.0.5.0/24	207.0.6.0/24	207.0.7.0/24
207.0.8.0/24	207.0.9.0/24	207.0.10.0/24	207.0.11.0/24	207.0.12.0/24	207.0.13.0/24	207.0.14.0/24 Unspecified	207.0.15.0/24 Unspecified

Consider the impact of your IPv6 changes on your network

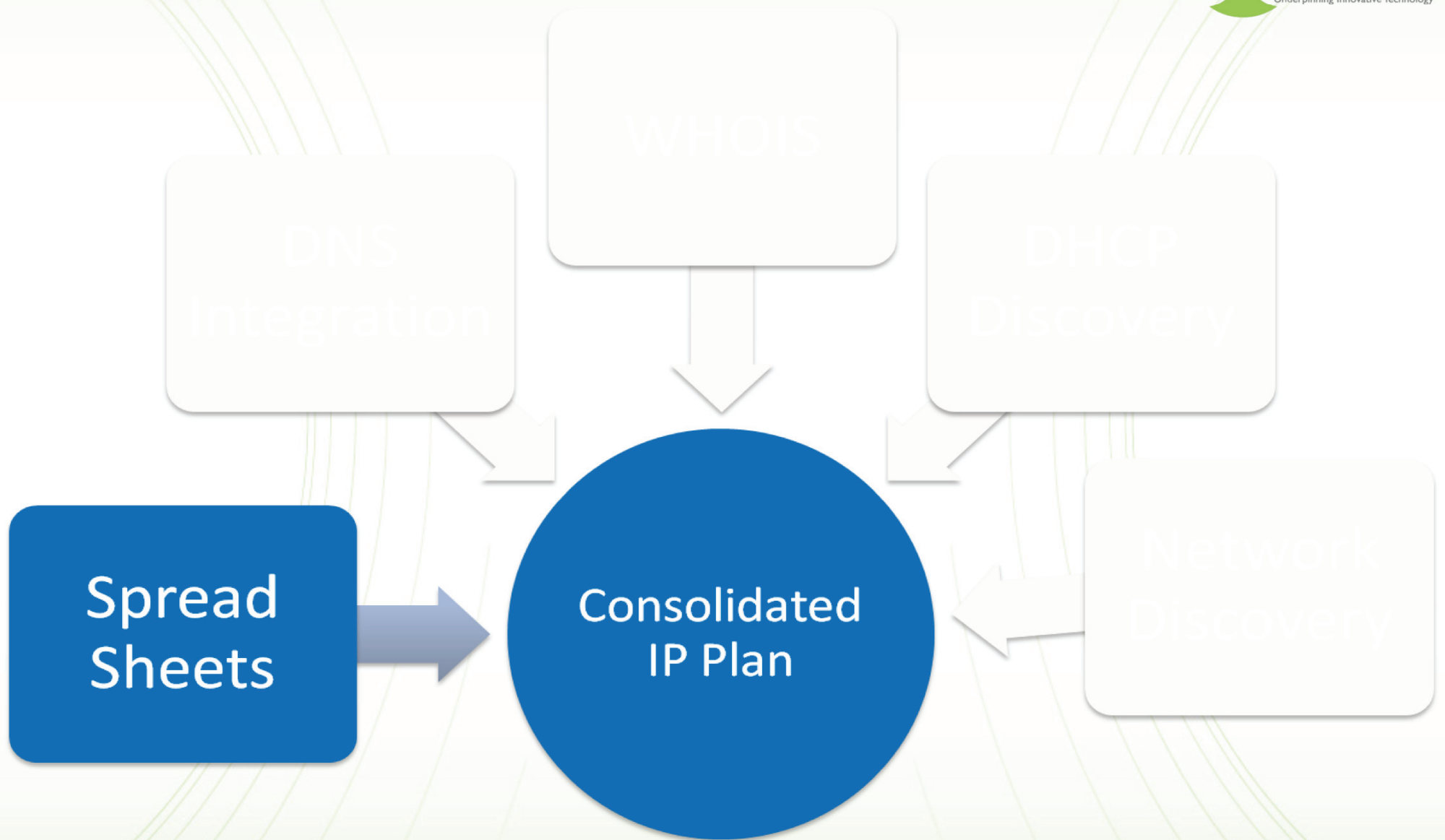


- Decide what features you will use. (Prefix delegation or not?)
- How do you want to plan /32 and downwards
 - Assigning out /56 and /64 to customers
 - Automatic generation of IPv6 addresses
 - Management of forward and reverse DNS records

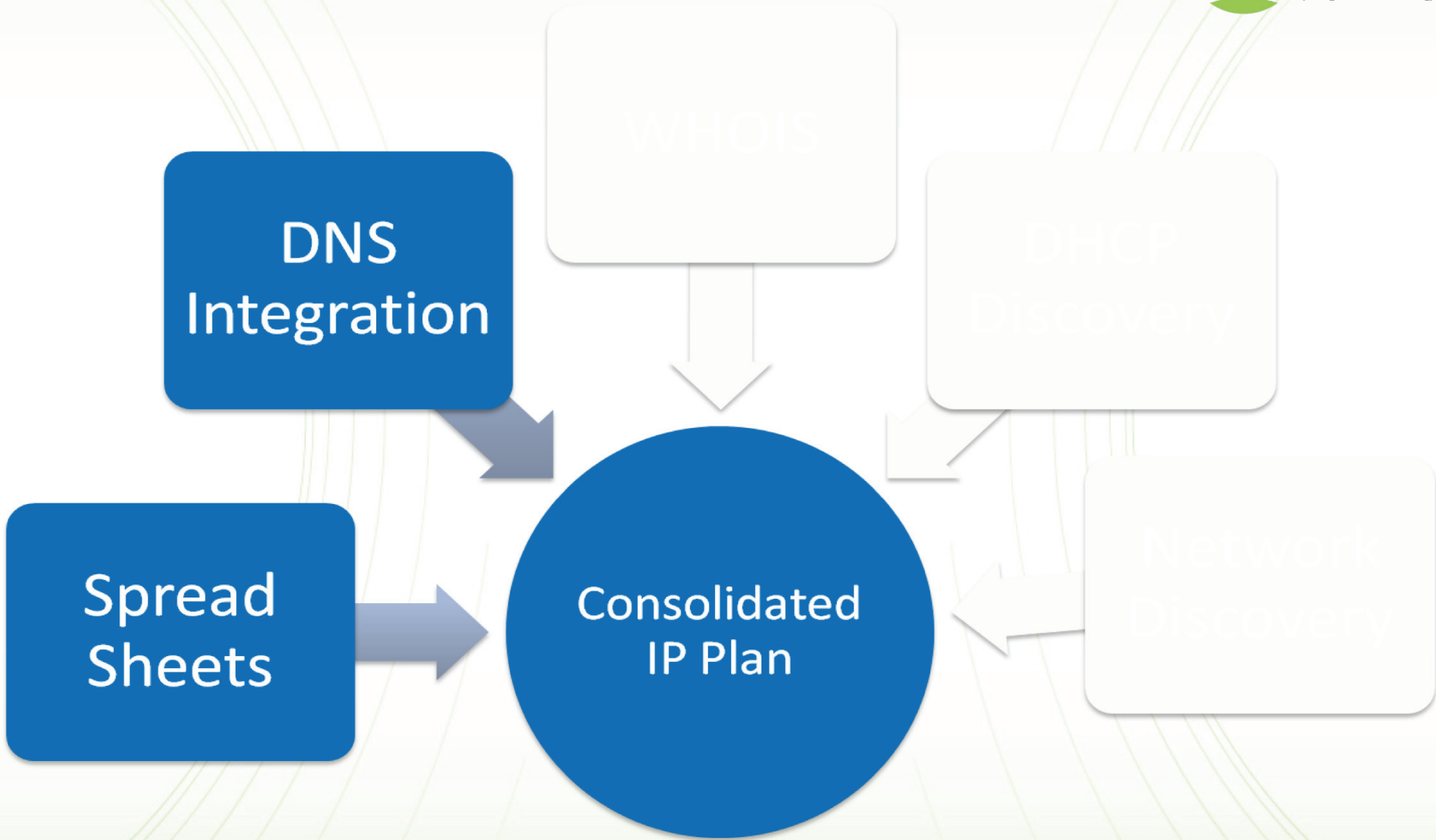
2001:0000:aaaa:bbbb::1/64
2001:0000:aaaa:bbbb::1/64
2001:0000:aaaa:bbbb::1/64
2001:0000:aaaa:bbbb::1/64



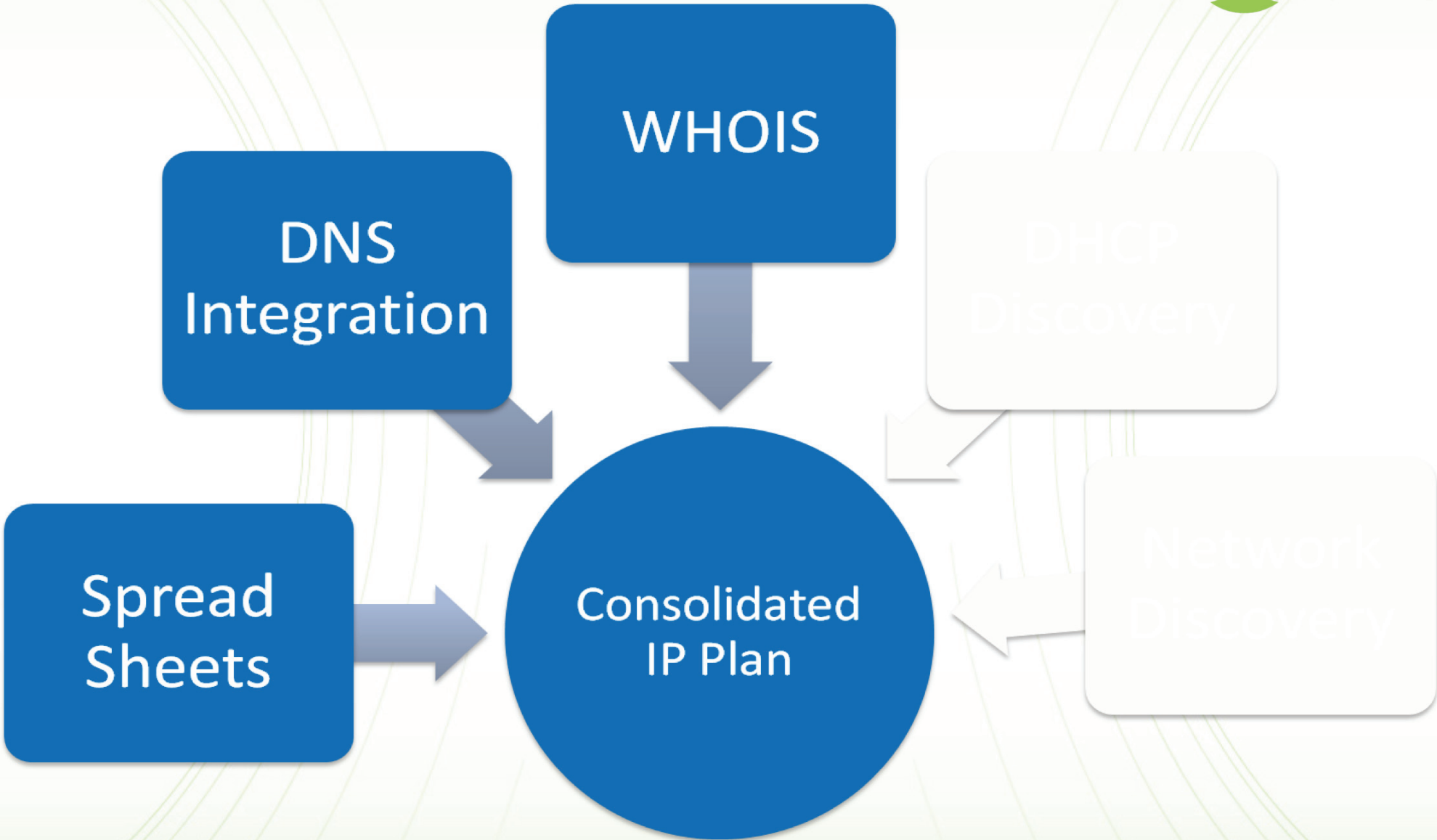
Detailed Insight Into Your Network



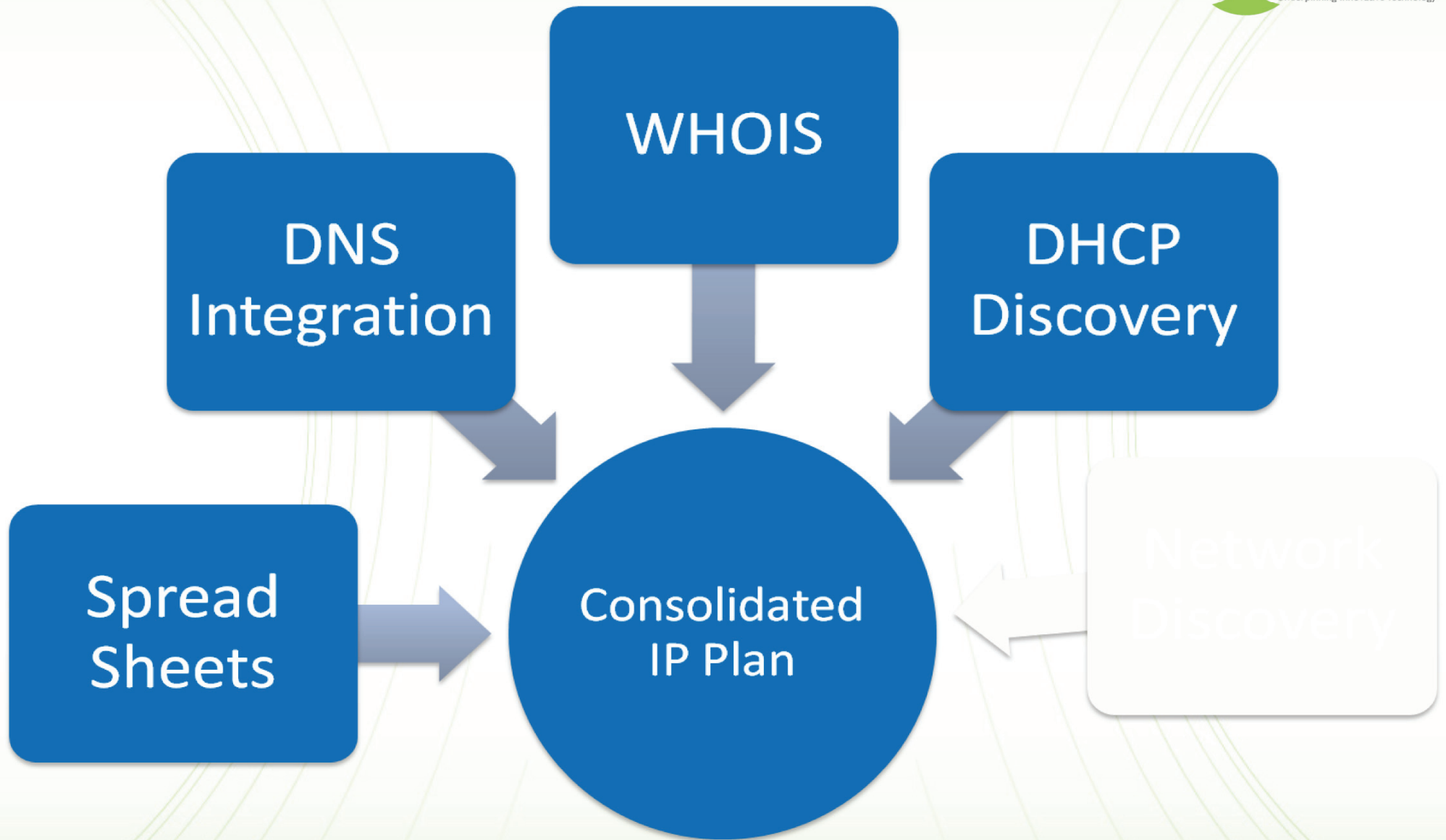
Detailed Insight Into Your Network



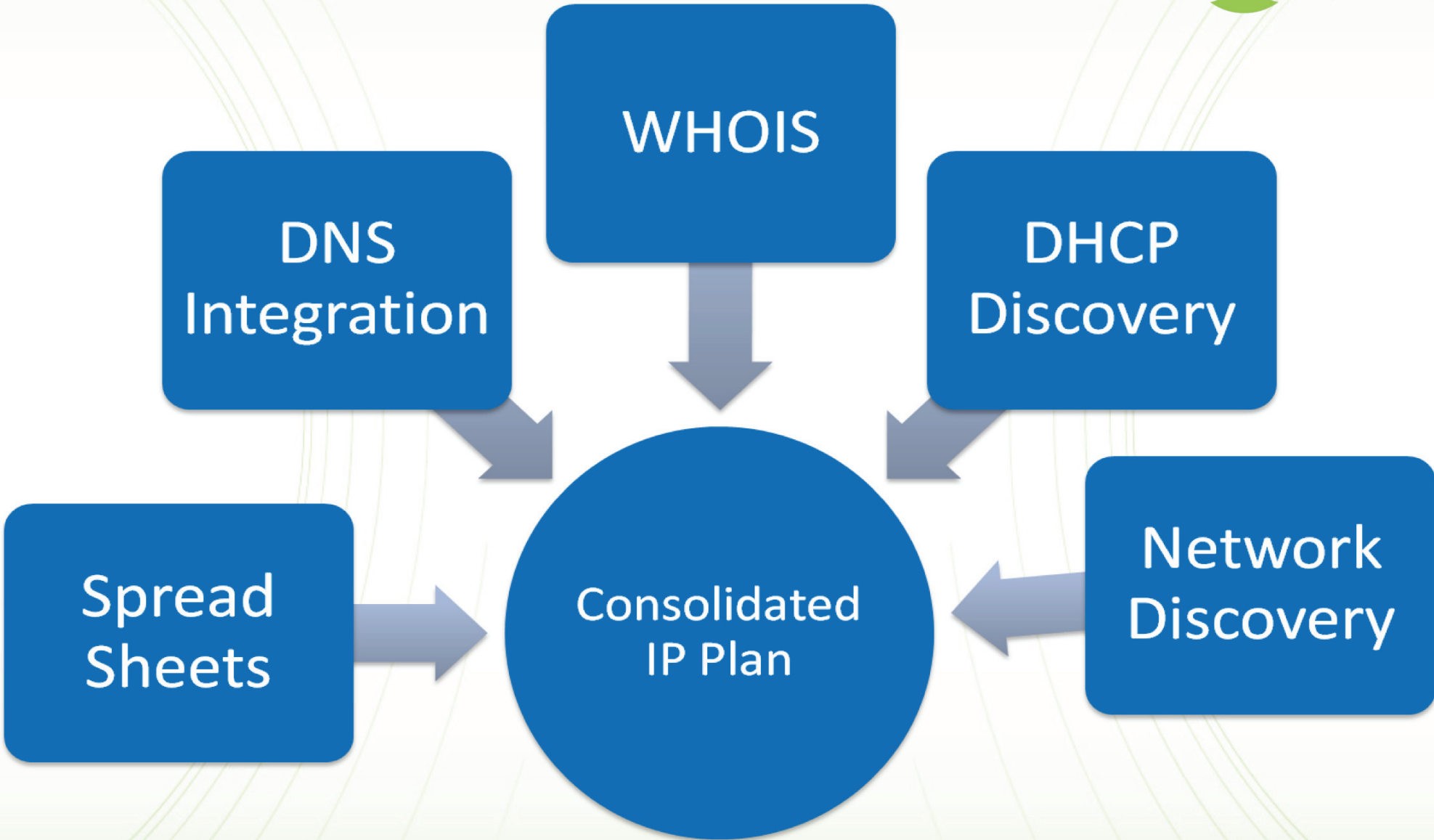
Detailed Insight Into Your Network



Detailed Insight Into Your Network



Detailed Insight Into Your Network



The need of IPAM

- IPAM solution will be key to your planning success.

Plan Subnet: 74.128.0.0/16 Refresh Help

Reaggregate |

Set Properties: Service Type: Unspecified DHCP Service: None - Select Owner: None - Select

▼ **Subnet Map: 74.128.0.0/16 divided into /24 portions**

Display Options: Mask: 24

Legend: Unplanned Free Assigned/Delegated Reserved Mixed Contains multiple Blocks "..." - Mixed Service Types

74.128.0.0/24 Unspecified	74.128.1.0/24 Unspecified	74.128.2.0/24 Unspecified	74.128.3.0/24 Unspecified	74.128.4.0/24 Unspecified	74.128.5.0/24 Unspecified	74.128.6.0/24 Unspecified	74.128.7.0/24 Unspecified
74.128.8.0/24 Unspecified	74.128.9.0/24 Unspecified	74.128.10.0/24 Unspecified	74.128.11.0/24 Unspecified	74.128.12.0/22 Unspecified			
74.128.16.0/24 Unspecified	74.128.17.0/24 Unspecified	74.128.18.0/24 Unspecified	74.128.19.0/24 Unspecified	74.128.20.0/23 Unspecified		74.128.22.0/24 Unspecified	74.128.23.0/24 Unspecified
74.128.24.0/22 Unspecified					74.128.28.0/22 Unspecified		
74.128.32.0/23 Unspecified		74.128.34.0/23 Unspecified		74.128.36.0/24 Unspecified	74.128.37.0/24 Unspecified	74.128.38.0/24 Unspecified	74.128.39.0/24 Unspecified

The Solution Should



- Be Carrier Class, designed to meet the business processes of Carriers.
- Should support IPv6 and IPv4 simultaneously.
- As IPv4 blocks free up, you can even sell them to other lagging operators
- Generate IPv6

The Solution Should



- Provide reports to different users in different formats.
- Discover your network
- Have the ability to define custom parameters
- Have the ability to create reports the way you need them to be

The Solution should

- Pull information from the DHCP
- Update unobtrusively/frequently to maintain current records
- Integrate with your DHCP
- Provide auditing for Law Enforcement Agencies.

The Solution Should

- Be able to produce reports catered to your business flow
- Be able to support multiple users and scale to millions of IP database objects
- Be able to integrate with your DNS

Ensuring Optimal Use of IPv4



- Your system should eliminate fragmentation by using an automated process to identify unused blocks of space
- Controlling the request IP flow to facilitate renumbering of static assignments

Viewing 207.0.0.0 to 207.0.15.255 of 207.0.0.0/20 << < 207.0.0.0 Go > >>

Display Options Mask: 24 Legend

Unplanned Free Assigned/Delegated Reserved Mixed Contains multiple Blocks "-" - Mixed Service Types

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Simplifying Management of IPv6



- Planning /32 and downwards
 - Assigning out /56 and /64 to customers
 - Automatic generation of IPv6 addresses
 - Management of forward and reverse DNS records

2001:0000:aaaa:bbbb::1/e2
2001:0000:aaaa:bbbb::1/e2
2001:0000:aaaa:bbbb::1/e2
2001:0000:aaaa:bbbb::1/e2



Questions?