

# Incognito Software Inc.

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- ✓ Corporate Profile
- ✓ DHCP-IPAM solutions overview

## Who is....Incognito Software Inc?

- ❑ Incognito, **Founded in 1992**, 18 years in business, year over year profit, year over year growth, 70 Employees, Locations worldwide
- ❑ Leader in device provisioning with well over **50 Million devices provisioned**, countless services enabled spanning over 75 customers worldwide
- ❑ Products: **Device provisioning, IP address management (IPAM), and DNS management.**
- ❑ Support over **20 different SIP VoIP terminal vendors** and over 45 phone and MTA models, the **largest selection offered by any provisioning solution**
- ❑ **Key Benefits We Provide:** Reduced manual administration, faster renewed service activation, prevention of IP address inventory depletion, DNS security and simplified service activation via our recent acquisition of **IEL and the Conexon** suite of products.
- ❑ **Differentiators:** Carrier-grade 5-nines reliability, easy service customization, high-speed response, multi-tiered security, low integration and startup costs



## *What is our Mission?*

*To help communication service providers achieve fast, cost-effective deployment of IP-based data, voice, and video services using IP management and device activation systems.  
This is our sole focus!*

# Prospering

- ❑ Sales tripled in 5 years (2004-2009)
- ❑ Profitable year / year
- ❑ No debt
- ❑ Continually self funded
- ❑ 60% of revenues go to R&D
- ❑ All code controlled by Incognito



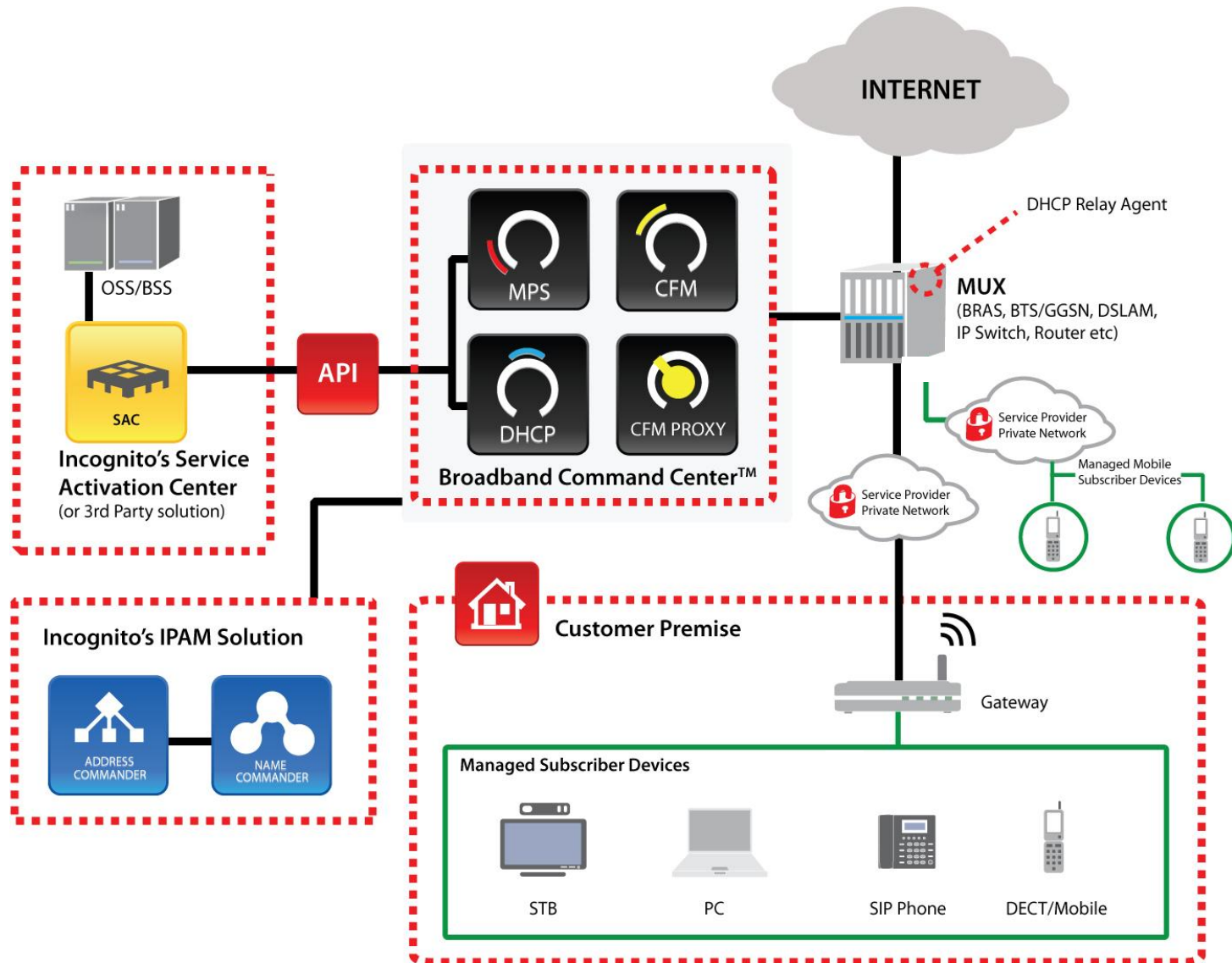
# Our Lead Customers



# Global Partners, Integrated Solutions and Memberships



# Incognito Product Family



# Broadband Command Center – Centralized DHCP Solution

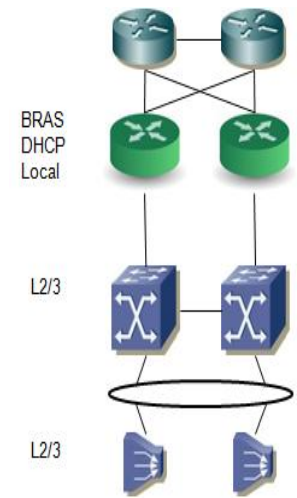
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- Enabling Centralized and Weighted DHCP Access Networks

# DHCP Challenges in Telco Access

## ❑ Legacy DHCP Solutions:

- Force operators to strand precious IPv4 Addresses per aggregation network element like BRAS (xDSL aggregation) or GGSN (Mobile Core)
- Limit ability to handle peak busy hour address utilization which causes over scarce provisioning of IPv4 space to BRAS or GGSN elements
- Unable to support new IPoE Access network architectures
- Exhaust IPv4 resources under topology convergence should a BRAS or a GGSN fail





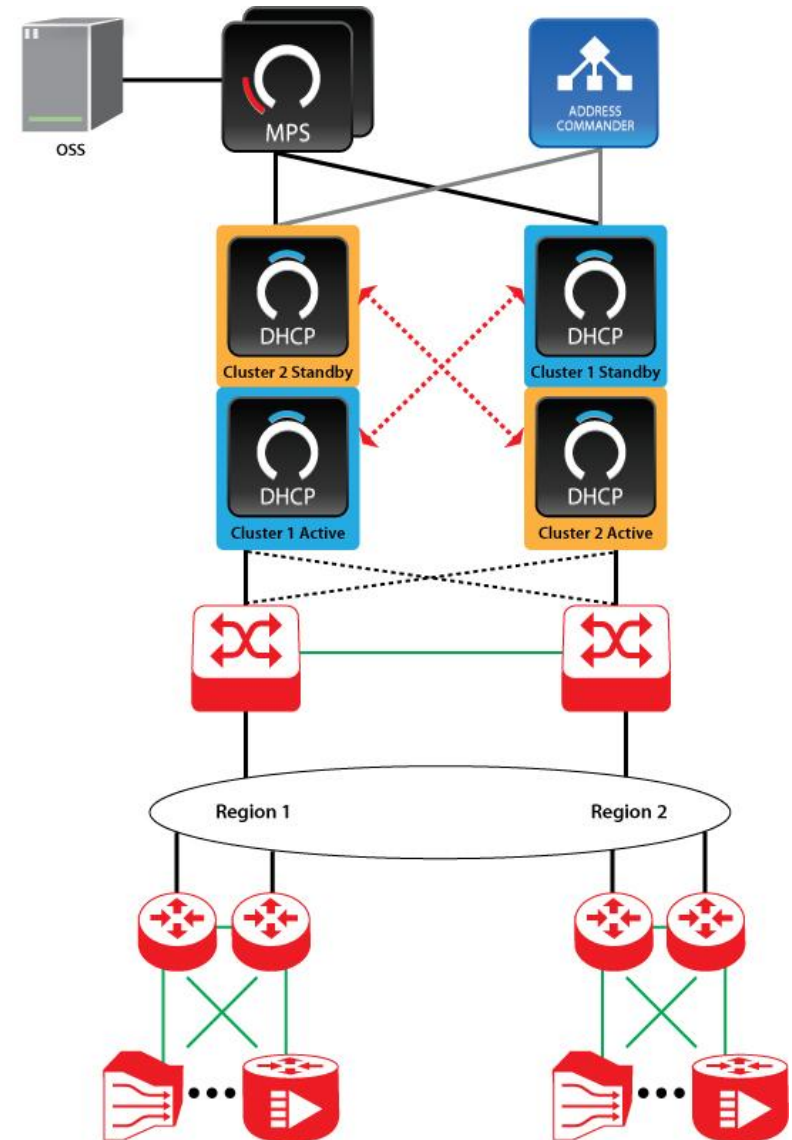
# DHCP Challenges in Telco Access

- Central DHCP challenges:
  - A Carrier Ethernet access network does not know the MAC address of its clients
  - The network spans xDSL, Circuit Facility, Fiber, and Wireless Access
  - Multiple types of DHCP Relay mux elements all with vendor independent Relay Information formats
  - Central DHCP Clusters need to support the Topology in the event of convergence
    - Simply put, DHCP Cluster 1 needs to service Addresses for DHCP Cluster 2 side of the network and vice versa
  - Support the current OSS infrastructure to add and remove subscribers, yet not know the MAC address of a 'Subscriber' device

# Incognito Centralized DHCP Solutions

(1/2)

- Enable centralized DHCP architecture
- Support both PPPoE and IPoE Network models
- IPv4 Addresses may be associated with multiple BRAS or GGSN
- Peak Busy Hour IPv4 space to BRAS or GGSN elements solved with Weighted DHCP Networks with Dual BRAS or GGSN association



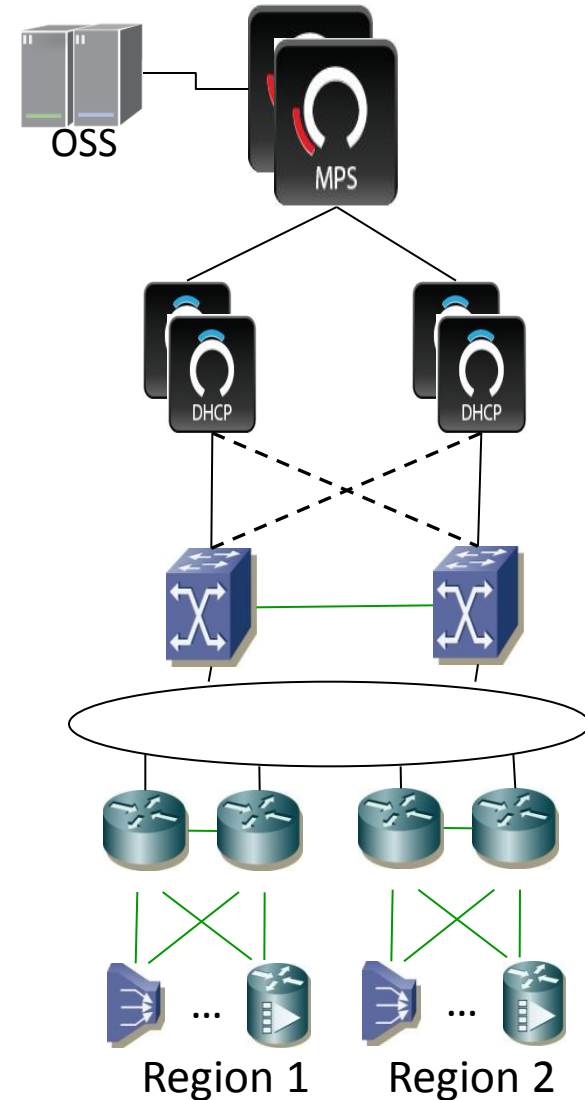
# Incognito Centralized DHCP Solutions

## (2/2)

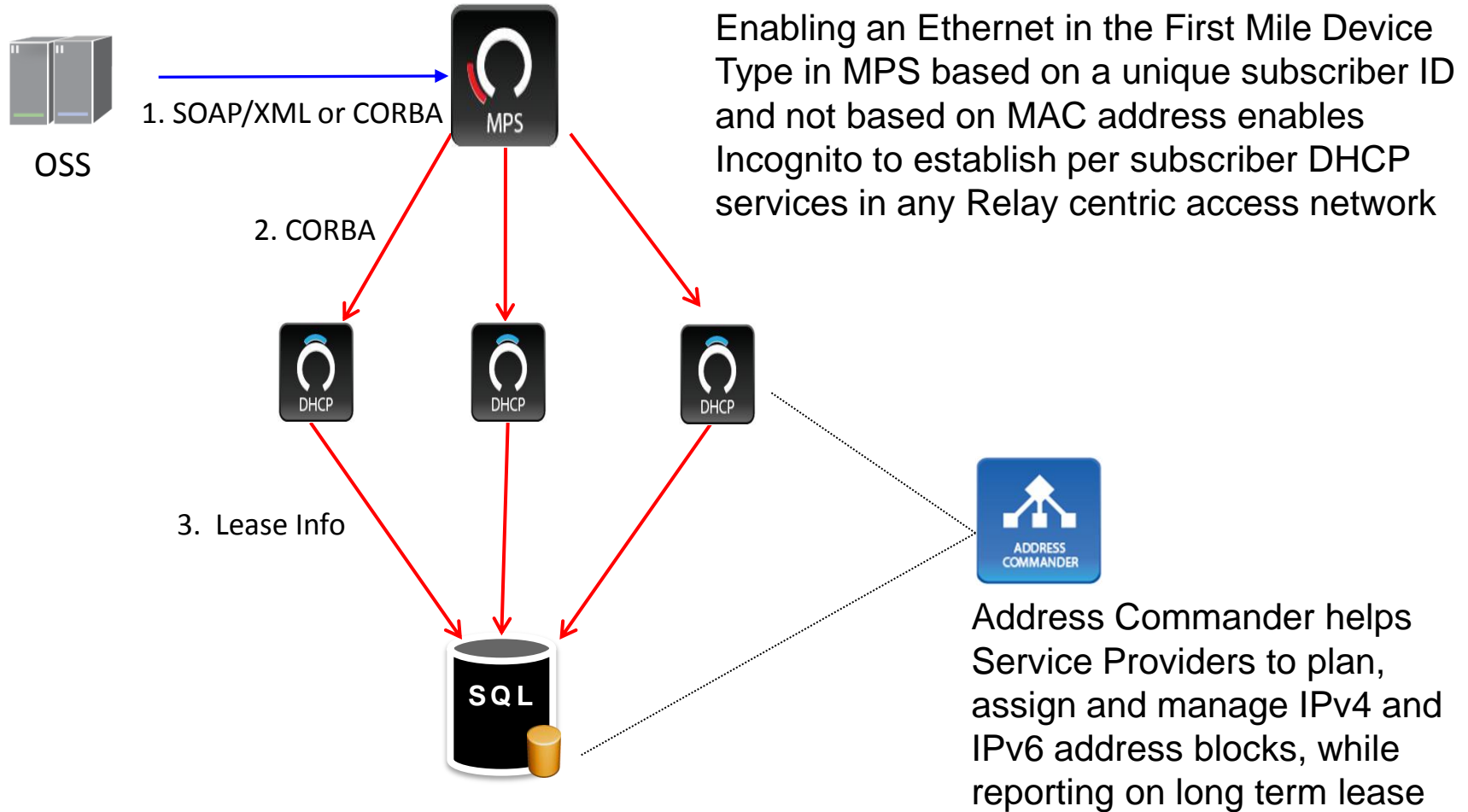
- Offer dynamic addressing
- Influence the Weight of one Associated Network from another
- Associate networks on GIAddr (Gateway client was heard from) with the Weighted order
- Failover service with same weight from Top Down as normal
- Failover server also respects the Weight of an Associated Network
- Incognito DHCP Clusters Spanning two Data Centers establish Geo-Redundancy for the Customer
- Access network defines 2 Relays (one per DHCP in cluster as normal)

# Use Case 1 ; Centralized DHCP deployed for a European Telco (1/2)

- ❑ OSS Integration Over SOAP XML or CORBA API
  - Each SubscriberID is a unique subscriber from the point of the Relay Information in the Access Network / The subscriber is assigned a Client Class Membership
- ❑ MPS manages Subscriber – Client Class updates to all DHCP services known
- ❑ DHCP Service with Option 82.6/.2 contents is able to match a Client Class
- ❑ DHCP Service Alternate Clusters
- ❑ RADIUS Accounting for Lease Collection
- ❑ Overall Incognito has:
  - Reduced costs in integration and hardware requirements for the customer
  - All main functionality contained in core Incognito service components
  - Made it far easier to maintain than other approaches based on LDAP
  - Offered flexibility and control over the DHCP solution

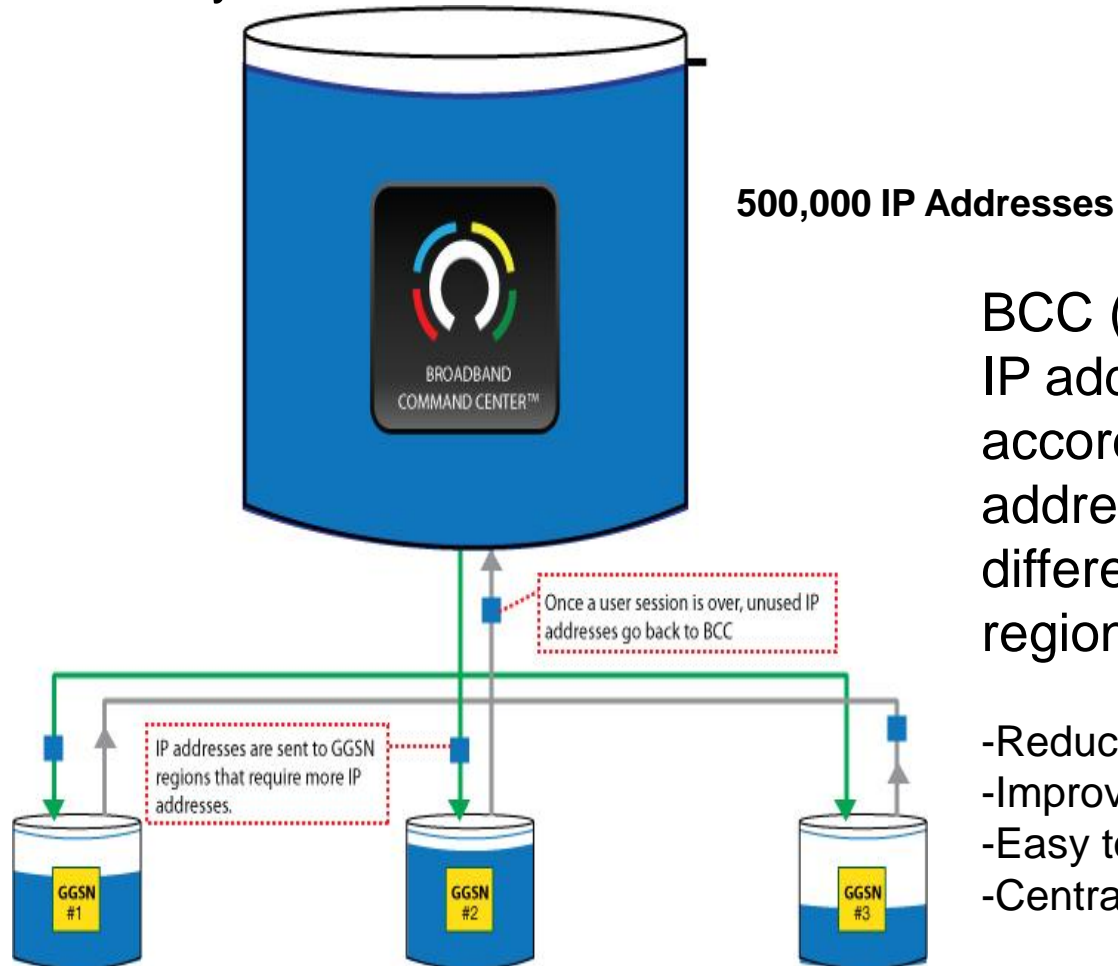


# Use Case 1 ; Centralized DHCP deployed for a European Telco (2/2)



# Use Case 2 ; Centralized DHCP deployed for a Mobile operator (1/2)

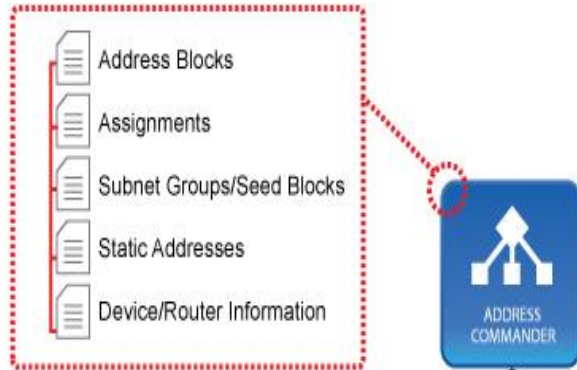
Different GGSN regions might require more/less IP addresses at certain times of day in order to handle increased subscriber activity.



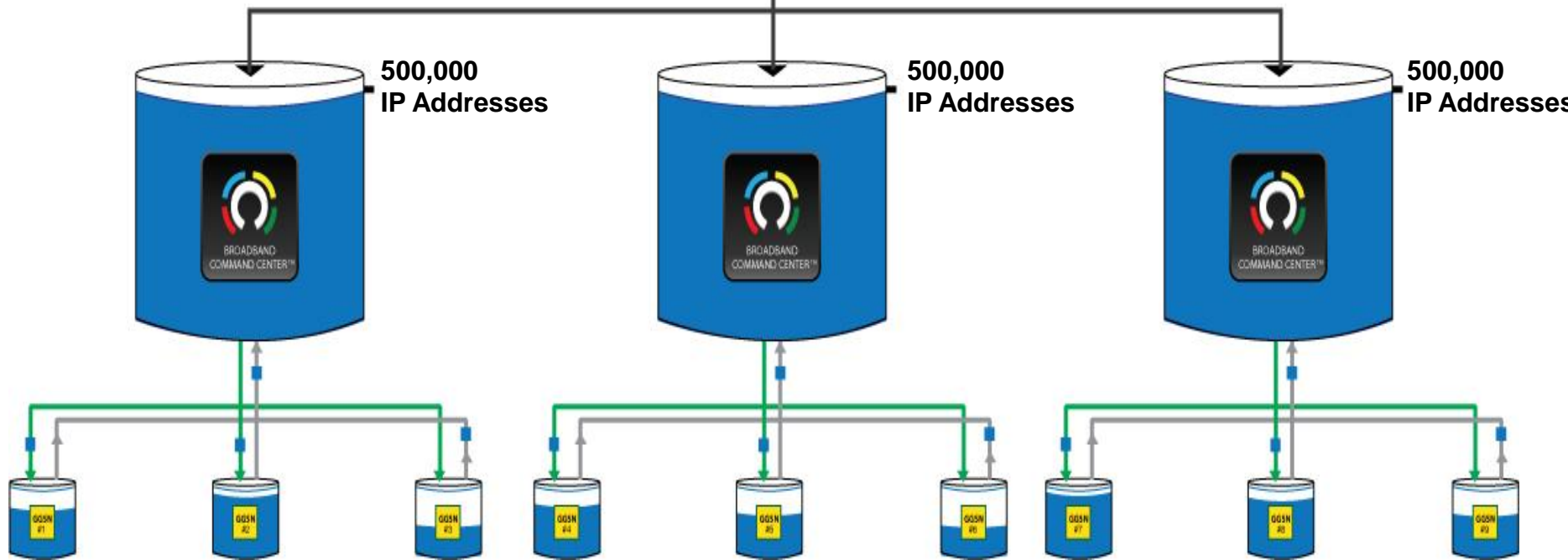
BCC (DHCP) assigns IP addresses according to the addressing needs of different GGSN regions.

- Reduce IP waste
- Improve utilization
- Easy to report/collect data
- Centralized IP address

# Use Case 2 ; Centralized DHCP deployed for a Mobile operator (2/2)



Address Commander will help the service provider to plan, assign and manage its IPv4 and IPv6 address blocks



# BCC - Centralized DHCP solution

## key benefits

- ❑ Incognito is the only commercial DHCP vendor to offer Weighted DHCP address pools with fully redundant Secondary standby DHCP services
- ❑ Reduced costs in integration and hardware requirements for the customer
- ❑ Made it far easier to maintain than other approaches based on LDAP
- ❑ Offered flexibility and control over the DHCP solution
- ❑ Customers may now influence the order of sub-networks DHCP will utilize based client location in the access network
- ❑ The implementation is Relay agnostic
  - CMTS, DSLAM, MEN & PBT, PON, Wireless BTS and Wireless GGSN would all be enabled



# Address Commander IPAM Solution

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# IP Address Management Issues

- ❑ Lack of address space visibility for IPv4 and v6 addresses
- ❑ Inability for geographically dispersed personnel to manage IP addresses simultaneously
- ❑ Inconsistencies between DNS and IP information
- ❑ Lengthy IPv4 request process for new services
- ❑ Inconsistent regional deployments
- ❑ Solutions don't meet our needs



# IP Address Management Issues

- ❑ Inaccurate or duplicated addresses due to the management of disparate spreadsheets, managed different groups and different applications
- ❑ Example of a spreadsheet maintained by a service provider:

Block						Customer Name	Cust ID	City	Edge
206.169.0.0/20 for LSAG Region									
208	169	0	0	/	28	OPEN		SNFR	DEV-01
208	169	0	16	/	28	National Instruments	898998	OLKD	DEV-02
208	169	0	32	/	27	Revere Data LLC	898999	OLKD	DEV-01
208	169	0	64	/	26	Munger Properties, LLC	899000	OLKD	DEV-02
208	169	0	128	/	25	Argonaut Hotel	899001	OLKD	DEV-02
208	169	1	0	/	29	Tapestry Financial	899002	OKLD	DEV-02
208	169	1	8	/	30	MD Beauty Inc	899003	OKLD	DEV-02
208	169	1	12	/	30	OPEN		OKLD	DEV-02
208	169	1	16	/	28	OPEN		OKLD	DEV-02
208	169	1	32	/	27	VEOH Networks	176231	SNDG	DEV-01
208	169	1	64	/	27	OPEN		OKLD	DEV-02

# Product Introduction


## IP Address Management (IPAM) Solution (1 of 4)

- ❑ Centralize and track IPv4 and IPv6 address blocks
- ❑ Easily move free IP blocks by allocating them to different groups or regions



**Subnet : 74.128.4.0/24**

[Delete](#) | [Plan](#) | [Allocate](#) | [Assign](#) | [Reserve](#) | [Delegate](#) | [Merge](#) | [Move](#) | [Reconcile with RIR](#) | [Validate RIR data](#) | [Bookmark](#) | [Print](#)

Name:	74.128.4.0/24	Service Type:	
Block:	 Free	Owner:	None
Parent Subnet:	<a href="#">74.128.0.0/21</a>	DHCP:	None
Subnet Group:	<a href="#">BACKBONE</a>	Device:	None

**Details** | **Options**

## IP Address Management (IPAM) Solution (2 of 4)

- ❑ Track IP space associated with regional offices and business units or customers
- ❑ Automate reporting for internal audit and reconciliation with Regional Internet Registries (RIR)
- ❑ Replace spreadsheets with a more powerful solution that allows multiple users and automated processes to request allocations simultaneously

# Product Introduction

## IP Address Management (IPAM) Solution (3 of 4)

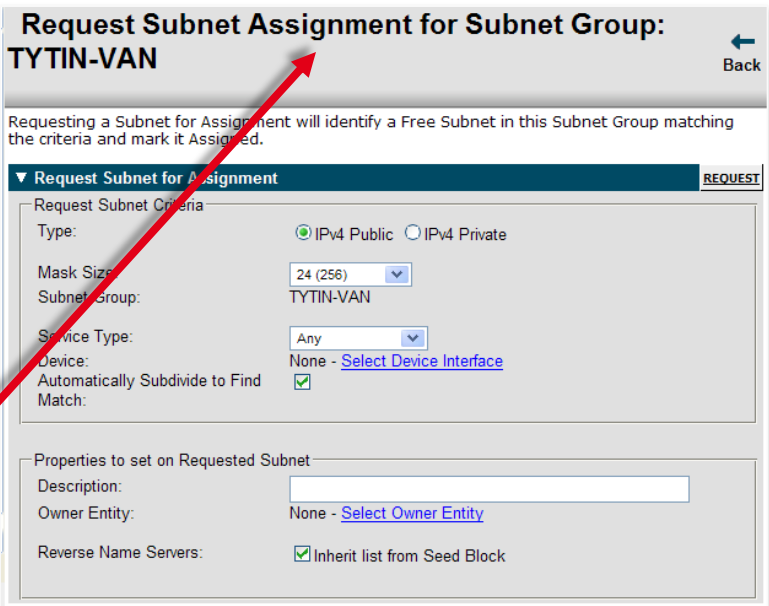
- The deployment of a IPAM solution allows:
  - Multiple users to access and update the information simultaneously
  - Indexed searching based on IP address, purpose, customer, user defined fields and other properties
  - Creation of various customizable reports

# Product Introduction

## IP Address Management (IPAM) Solution (4 of 4)

□ The deployment of a IPAM solution also allows:

- Visual representation of free, assigned and reserved address space
- Standardized and automated requests for additional allocations



**Request Subnet Assignment for Subnet Group: TYTIN-VAN** Back

Requesting a Subnet for Assignment will identify a Free Subnet in this Subnet Group matching the criteria and mark it Assigned.

**Request Subnet for Assignment** REQUEST

Request Subnet Criteria

Type:  IPv4 Public  IPv4 Private

Mask Size: 24 (256)

Subnet Group: TYTIN-VAN

Service Type: Any

Device: None - [Select Device Interface](#)

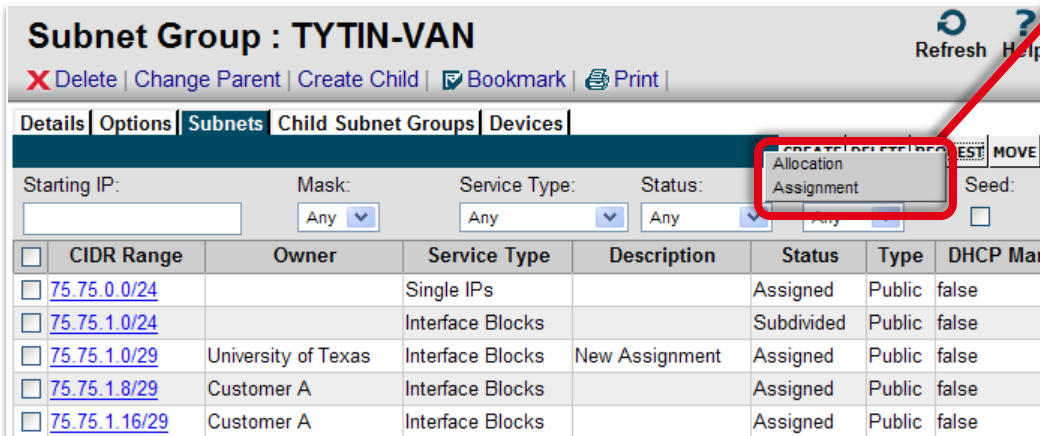
Automatically Subdivide to Find Match:

Properties to set on Requested Subnet

Description:

Owner Entity: None - [Select Owner Entity](#)

Reverse Name Servers:  Inherit list from Seed Block



**Subnet Group : TYTIN-VAN** Refresh Help

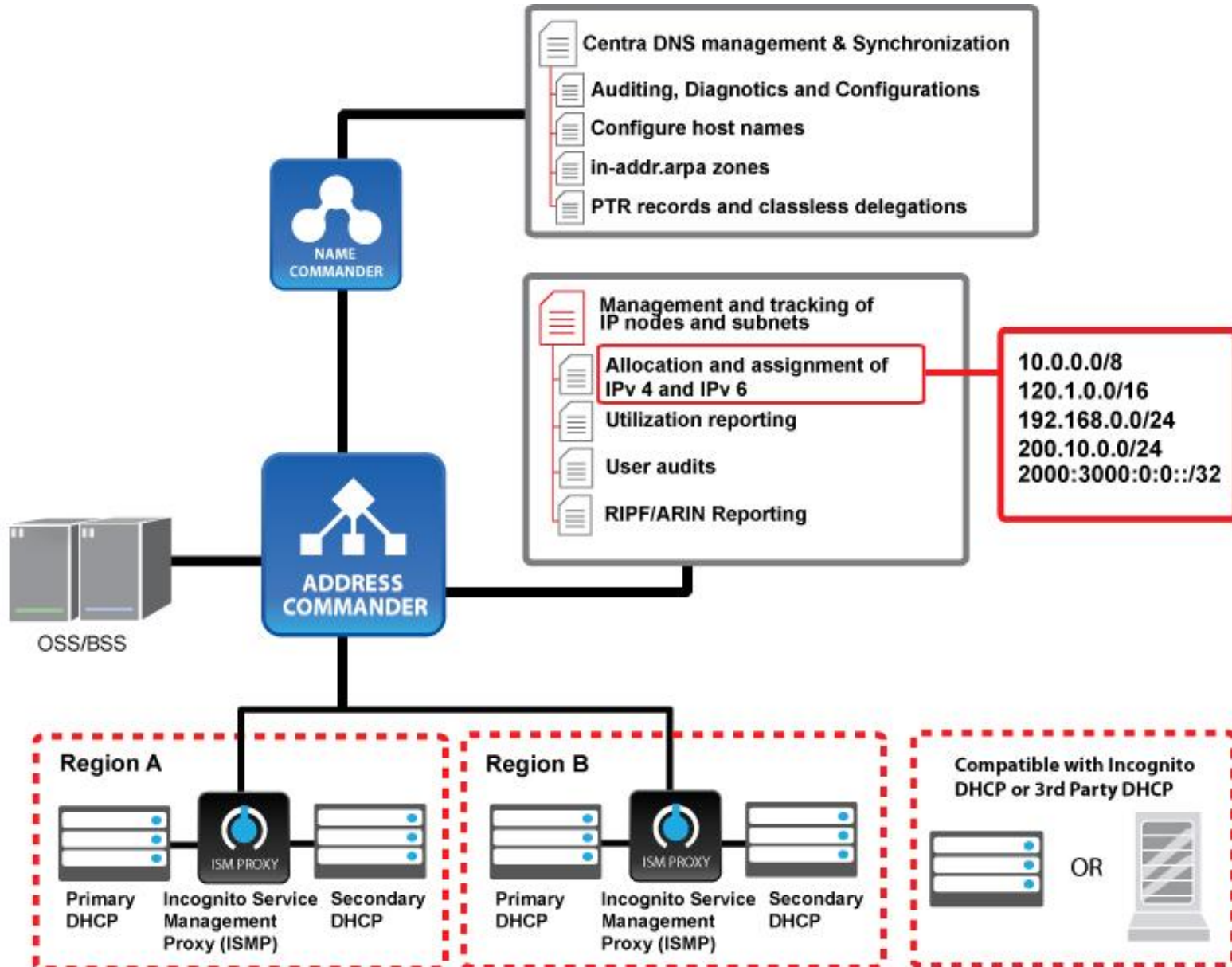
[Delete](#) | [Change Parent](#) | [Create Child](#) | [Bookmark](#) | [Print](#)

Details | Options | **Subnets** | Child Subnet Groups | Devices

Starting IP:  Mask: Any Service Type: Any Status: Any Seed:

Allocation	Assignment	EST	MOVE				
<input type="checkbox"/>	CIDR Range	Owner	Service Type	Description	Status	Type	DHCP Man
<input type="checkbox"/>	<a href="#">75.75.0.0/24</a>		Single IPs		Assigned	Public	false
<input type="checkbox"/>	<a href="#">75.75.1.0/24</a>		Interface Blocks		Subdivided	Public	false
<input type="checkbox"/>	<a href="#">75.75.1.0/29</a>	University of Texas	Interface Blocks	New Assignment	Assigned	Public	false
<input type="checkbox"/>	<a href="#">75.75.1.8/29</a>	Customer A	Interface Blocks		Assigned	Public	false
<input type="checkbox"/>	<a href="#">75.75.1.16/29</a>	Customer A	Interface Blocks		Assigned	Public	false

# How It Fits into Your Network





# Address Commander integration with DHCP Servers

- ❑ Easy integration with any DHCP server allows:
  - Collection of IP address usage and assigned status
  - Detection of IP related configuration changes
  - Detection of problematic configurations across DHCP servers
  
- ❑ Prevents duplicate assignments through business rules and constraints

# Address Commander features with BCC-DHCP Integration

- ❑ *Broadband Command Center™* (BCC) DHCP scope discovery and utilization
- ❑ *Incognito Service Management Proxy* (ISMP)
- ❑ Automatic capturing of BCC utilization numbers
- ❑ Detection of problematic DHCP configurations
- ❑ Provision static addresses directly with *Address Commander™* (AC)



# Address Commander features with Name Commander Integration

- ❑ Centralized management of DNS information
- ❑ Automatic DNS Synchronization
  - A constellation of controlled name servers can be treated as one system via a hidden master
- ❑ IPv6 and IPv4 Host Names
- ❑ Node Form
- ❑ Reverse Zones Management



# Address Commander key benefits

- ❑ Effortlessly visualize and plan address space
- ❑ Monitor space usage and trends
- ❑ Collaborate with other department and regions
- ❑ Easily report to RIR
- ❑ Integrate and manage previously independent processes

# Incognito Software Inc.

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