

# Cisco Intercloud Fabric for Business

## Combining the Benefits of Public and Private Clouds in a Hybrid Cloud

Cisco® Intercloud Fabric for Business enables enterprises to create a seamless hybrid cloud by transparently extending their data centers or private clouds into public clouds and provider-hosted clouds. Using industry-leading Cisco networking capabilities, Cisco Intercloud Fabric allows enterprises to deploy a hybrid cloud that combines the benefits of public and private clouds. With Cisco Intercloud Fabric for Business, enterprises can have the agility and flexibility they need while retaining full security and control.

### Overview

With Cisco Intercloud Fabric for Business, customers can build secure hybrid clouds and extend their existing data center to public clouds on demand. Cisco Intercloud Fabric is a highly secure, open, and flexible solution that enables freedom in workload placement across private and public clouds in response to business needs. It helps ensure the same network security and access control policies in the public cloud as previously were enforced in the data center. Cisco Intercloud Fabric enables enterprises to connect on-premises data centers to multiple provider clouds and take advantage of elastic cloud capacity, lower costs, and fast access to resources.

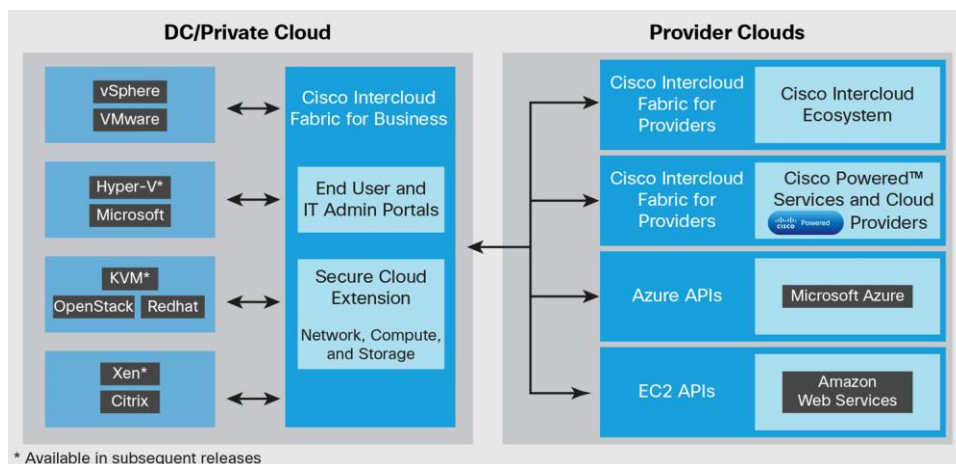
The benefits of Cisco Intercloud Fabric include:

- Freedom to place workloads across heterogeneous clouds with unified workload management
- Bidirectional workload mobility across clouds
- Choice of hypervisor and public cloud providers
- Centralized visibility across private and public cloud environments
- Consistent operational model with common network and security policies across private and public clouds

### Cisco Intercloud Fabric

Figure 1 provides an overview of the Cisco Intercloud Fabric solution.

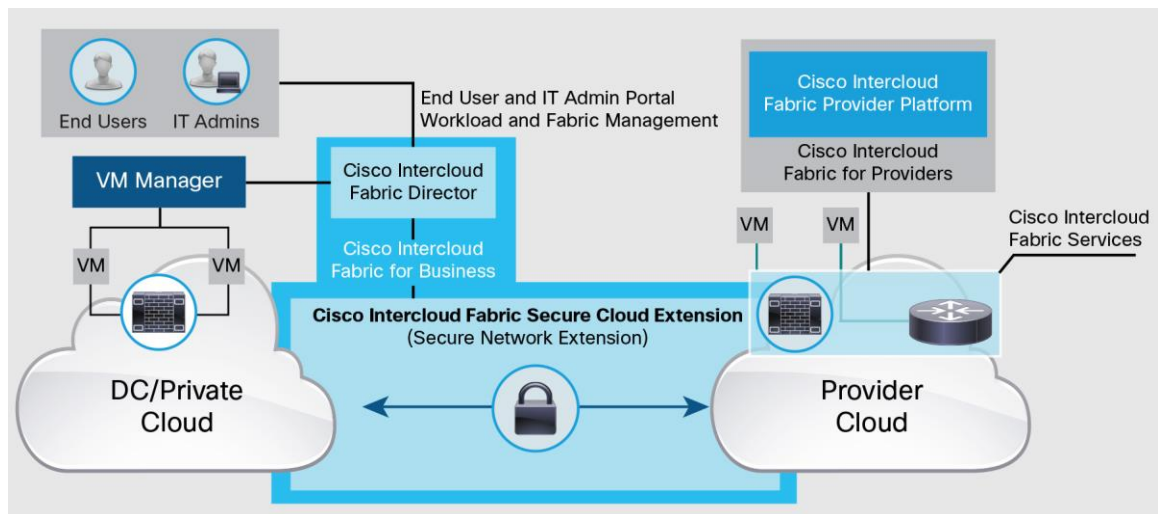
**Figure 1.** Solution Overview: Cisco Intercloud Fabric



- **Self-service workload deployment:** Cisco Intercloud Fabric allows end users to easily deploy workloads across various public clouds or migrate workloads across clouds. It offers a built-in administration and end-user portal as well as rich northbound APIs for automation.
- **End-to-end security:** Cisco Intercloud Fabric provides end-to-end cryptographic secure connectivity from private to public clouds and security within the public cloud for data in motion.
- **Consistent networking capabilities:** Cisco Intercloud Fabric provides Layer 2 network extension from private to public clouds, helping ensure application transparency. It includes integrated switching, routing, and virtual firewall and NAT capabilities.
- **Bidirectional workload mobility:** Cisco Intercloud Fabric allows workloads to be migrated from private to public clouds and back. It includes automatic image conversion to the desired cloud format, so virtual machines can be placed on or migrated to any cloud.
- **Choice:** Cisco Intercloud Fabric provides choice of cloud providers and hypervisors.

Figure 2 shows the Cisco Intercloud Fabric architecture.

**Figure 2.** Cisco Intercloud Fabric: Architectural Details



- Cisco Intercloud Fabric Director serves as the end-user and IT portal for provisioning and management of the public cloud extension. This single console provides visibility into virtual machines in private clouds along with complete lifecycle management for virtual machines running in public clouds. It is also used for managing cloud network services. Cisco Intercloud Fabric provides open APIs, which allow integration of third-party management tools.
- Cisco Intercloud Fabric Secure Cloud Extension provides a secure Layer 2 extension from the enterprise data center to the cloud. It includes Cisco Intercloud Fabric Extender virtual machines placed on the private cloud and Cisco Intercloud Fabric Switch virtual machines placed on the public cloud to provide secure connectivity using the standard datagram transport layer security mechanism.

## Cisco Intercloud Fabric for Business: Supported Cloud Providers

Table 1 lists the supported cloud providers and Operating Systems supported by Cisco Intercloud Fabric for Business.

**Table 1.** Supported Cloud Providers

| Supported Cloud Providers   | Supported OS Version  |
|---|---|
| <b>Amazon Web Services (AWS)</b> <ul style="list-style-type: none"> <li>• Amazon EC2 Classic</li> <li>• Amazon EC2 VPC</li> </ul> | <ul style="list-style-type: none"> <li>• RHEL 6.0 - 6.5: 64-bit versions</li> <li>• CentOS 6.2 - 6.5: 64-bit versions</li> <li>• Windows 2008 R2 SP1</li> <li>• Windows 2012</li> <li>• Windows 2012 R2</li> <li>• SUSE Linux 11 SP2 and SP3</li> </ul> |
| <b>Microsoft Azure</b>  | <ul style="list-style-type: none"> <li>• RHEL 6.0 - 6.5: 64-bit versions</li> <li>• CentOS 6.2 - 6.5: 64-bit versions</li> <li>• Windows 2008 R2 SP1</li> <li>• Windows 2012</li> <li>• Windows 2012 R2</li> <li>• SUSE Linux 11 SP2 and SP3</li> </ul> |
| <b>Cisco Hybrid Cloud Bundle - in partnership with Dimension Data</b>   | <ul style="list-style-type: none"> <li>• RHEL 6.0 - 6.5: 64-bit versions</li> <li>• Windows 2008 R2 SP1</li> <li>• Windows 2012</li> <li>• Windows 2012 R2</li> <li>• SUSE Linux 11 SP2 and SP3</li> </ul>  |

## System Requirements

In this release, Cisco Intercloud Fabric is supported on VMware vSphere with the software available for download. OpenStack KVM, and Microsoft Hyper-V is supported with limited capabilities (please reach out to the Cisco sales team for access to software).

The following tables identify the system requirements for installing Cisco Intercloud Fabric.

**Table 2.** System Requirements

| Requirement                                   | Description   |
|---|---|
| <b>Cisco Intercloud Fabric Director</b>       |   |
| <b>Host</b>                                   | One host for hosting Cisco Intercloud Fabric components |
| <b>CPUs</b>                                   | 64-bit x86 CPU (VT capable)                             |
| <b>Network interface cards (NICs)</b>         | 2 (1 Gbps or 10 Gbps)                                   |
| <b>Cisco Intercloud Fabric Extender</b>       |   |
| <b>Memory</b>                                 | 2 GB  |
| <b>CPU</b>                                    | 2 vCPUs   |
| <b>Disk</b>                                   | 4 GB  |
| <b>Cisco Intercloud Fabric Director VSM</b>   |   |
| <b>Memory</b>                                 | 2 GB  |
| <b>CPU</b>                                    | 1 vCPU  |
| <b>Disk</b>                                   | 3 GB  |
| <b>Red Hat Enterprise Linux for OpenStack</b> |   |
| <b>Version</b>                                | 7.0   |

**Table 3.** Hypervisor Requirements

| Requirement  | Description      |
|--|------------------|
| <b>VMware</b>  |                  |
| Version  | 5.1 or 5.5, ESXi |
| vCPU   | 8                |
| Disk   | 350 GB           |
| Memory   | 8 GB             |
| <b>Openstack KVM</b>   |                  |
| Version  | Icehouse         |
| vCPU   | 8                |
| Disk   | 350 GB           |
| Memory   | 8 GB             |
| <b>Microsoft System Center Virtual Machine Manager (SCVMM)</b> |                  |
| Version  | SCVMM 2012 R2    |
| vCPU   | 8                |
| Disk   | 350 GB           |
| Memory   | 8 GB             |

**Table 4.** Client Requirements

| Supported Cloud Providers | Supported OS Version   |
|---------------------------|--|
| Operating System          | Microsoft Windows or Apple Mac OS  |
| Browser                   | Google Chrome 32.0 or higher<br><b>Note</b> We recommend that you use Google Chrome for Intercloud Fabric. |
| Flash Player              | Adobe Flash Player plugin 11.9 or higher   |

**Table 5.** System Requirements for Provider Clouds

| Provider/Model      | Device                           | vCPU | Memory (GB) | Disk (GB) |
|---------------------|----------------------------------|------|-------------|-----------|
| <b>AWS</b>          |                                  |      |             |           |
| c3.2xlarge          | Intercloud Fabric Switch         | 8    | 15          | 20        |
| C3.xlarge           | Intercloud Fabric Router         | 4    | 7.5         | 8         |
| m3.medium           | Intercloud Fabric Firewall (VSG) | 1    | 3.75        | 20        |
| <b>Azure</b>        |                                  |      |             |           |
| A3                  | Intercloud Fabric Switch         | 4    | 7           | 20        |
| All Other Providers | Intercloud Fabric Switch         | 4    | 4           | 20        |

## Scalability Limits

The following table lists the scalability limits for the Cisco Intercloud Fabric components.

**Table 6.** System Scalability

|   |                    |
|---|--------------------|
| Number of VMs per Intercloud Fabric   | Not to exceed 1000 |
| Number of Intercloud Fabric Cloud per Intercloud Fabric                                 | 16                 |
| Number of VLANs per Intercloud Fabric Cloud   | 16                 |
| Number of VMs per Intercloud Fabric Cloud   | 100                |
| Number of vNICs per Intercloud Fabric Cloud   | 256                |
| Number of Intercloud Fabric Firewalls (VSGs) and Intercloud Fabric Routers (CSR 1000Vs) | 2                  |

## Ordering Information

### Note on HCUs (Hybrid Cloud Units)

Cisco Intercloud Fabric metering is in Hybrid Cloud Units. There is a single metering unit across Intercloud ecosystem providers and general providers.

- A hybrid VM in a Cisco Intercloud Ecosystem Provider cloud consumes one Hybrid Cloud Unit
- A hybrid VM in a general, non-Cisco Intercloud Ecosystem Provider cloud (example: AWS, Azure) consumes two Hybrid Cloud Units

This software is installed on the enterprise data center private cloud or managed cloud. It allows connectivity with large-scale clouds, such as Azure and Amazon, and with service provider clouds operating the Cisco Intercloud Fabric Provider Platform. This solution is for consuming hybrid ports from general clouds such as Amazon and Azure and from ecosystem clouds.

Table 7 provides ordering information for Cisco Intercloud Fabric.

**Table 7.** Ordering Information

| Orderable SKU        | Subscription SKUs | Quantity Hybrid Ports | Description  |
|----------------------|-------------------|-----------------------|--|
| <b>ICFB-K9-50PK=</b> | -                 | 50 FIXED              | Intercloud Fabric Business Hybrid Cloud Units, Fixed Qty, 50 HCUs            |
| <b>ICFB-K9-HCU=</b>  | ICFB-K9-149-1YR   | 10-149                | Intercloud Fabric Business Hybrid Cloud Units (10 - 149 HCUs tier), 1 year   |
|                      | ICFB-K9-149-3YR   | 10-149                | Intercloud Fabric Business Hybrid Cloud Units (10 - 149 HCUs tier), 3 years  |
|                      | ICFB-K9-499-1YR   | 150-499               | Intercloud Fabric Business Hybrid Cloud Units (150 - 499 HCUs tier), 1 year  |
|                      | ICFB-K9-499-3YR   | 150-499               | Intercloud Fabric Business Hybrid Cloud Units (150 - 499 HCUs tier), 3 years |
|                      | ICFB-K9-500+1YR   | 500+                  | Intercloud Fabric Business Hybrid Cloud Units (500+ HCUs tier), 1 year       |
|                      | ICFB-K9-500+3YR   | 500+                  | Intercloud Fabric Business Hybrid Cloud Units (500+ HCUs tier), 1 year       |

## For More Information

For more information about the Cisco Intercloud Fabric, including software downloads, release notes, and technical documentation, visit <http://www.cisco.com/go/intercloudfabric>.



Americas Headquarters  
Cisco Systems, Inc.  
San Jose, CA

Asia Pacific Headquarters  
Cisco Systems (USA) Pte. Ltd.  
Singapore

Europe Headquarters  
Cisco Systems International BV Amsterdam,  
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at [www.cisco.com/go/offices](http://www.cisco.com/go/offices).

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: [www.cisco.com/go/trademarks](http://www.cisco.com/go/trademarks). Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)