Download the current version of the IBM Cloud Private Field Guide

https://ibm.biz/cloud-private-field-guide
IBM Cloud Private offers Platform as a Service (PaaS), with the benefits of a public cloud, including rapid deployment and scalability, increased performance, predictable costs, tighter security and flexible management options. A catalog of certified content provides containerized software, middleware, management and acceleration tools.

**YOUR CLOUD. SPEED OF PUBLIC. CONTROL OF PRIVATE.**

**Security and governance.** A cloud behind your firewall. Govern based on your security policies and regulatory requirements.

**Speed and elasticity.** Quickly deploy and scale resources to meet fluctuating demands.

**Built for DevOps.** Build and test in a protected environment that mirrors production. Manage and monitor all your workloads.

**Out of the box accelerators.** Prebuilt images, such as WebSphere Liberty, and automated deployment and configuration for those images are provided.

---

**What’s inside?**

This field guide provides a high-level overview of IBM Cloud Private.

**LEARN IT**

A summary of the concepts.

**GET STARTED**

Considerations for adopting private cloud.
IBM’s unique approach

IBM offers a great opportunity to help clients scale and host all their new modern apps, and “cloud-ify” current and legacy apps. IBM Cloud Private is IBM’s answer to the ever-growing demand for a private cloud and modern application platform that fits the enterprise in terms of compliance, security, support and services.

GET THEE TO THE CLOUD

Hybrid integration. IBM Cloud Private is a key step towards achieving hybrid integration between IBM’s public and private clouds.

Flexibility. Applications that run on IBM Cloud Private will run on IBM Cloud Kubernetes Service or IBM Cloud Platform Cloud Foundry.

Modernization. For years, you’ve invested in middleware and infrastructure across your enterprise. IBM Cloud Private helps you utilize those investments in new and innovative ways. IBM’s approach helps whether you are refactoring applications into cloud-native apps or containerizing existing applications.

Learn more

Check out IBM Cloud Private.
https://www.ibm.com/cloud/private
IBM is a trusted partner, providing technology and prescriptive guidance to deliver immediate business value.
Journey to private cloud

Before tackling your private cloud deployment, layout a road map for your enterprise. Fortunately, you don’t have to start from scratch. IBM provides a private cloud solution that can help you get started on the right path.

READY. SET. CLOUD!

**Prepare your people.** Establish common goals for success in your private cloud and achieve them through a collaborative culture that embraces and welcomes change.

**Automate your processes.** Streamline the way you work, from private cloud deployment to DevOps, including continuous integration and delivery via pipelines, monitoring and metering.

**Assess requirements.** Define scope, vision, and platform criteria for your cloud. Plan workloads and their required capacity, define integrations, and create deployment topologies.

**Operating environment.** Feel confident that your private cloud provides your workloads with an agile operating platform that is scalable, reliable, maintainable, secure and resilient.

Learn more

Check out the IBM private cloud architecture.
Start your journey to the private cloud.

We can help you keep it private.
Workload considerations

You’ve created a variety of applications necessary to run your business. Your application environment is diverse. To protect your existing investment, you can refactor and migrate applications to the cloud and connect to and extend workloads that remain on-premises. IBM Cloud Private provides the critical resources and capabilities you need to be successful.

EVERYTHING YOU NEED TO RUN YOUR WORKLOADS

Critical resources. Compute and networking are part of the platform. Your environment is automatically set up using Helm charts from a catalog.

Storage options. No matter how much data you have, you’ll have the storage options you need, such as NFS and Ceph.

Run your containerized applications. Scale up quickly using multiple lightweight and portable instances running where you need them.

Containerized IBM middleware. Continue to use your favorite IBM middleware products, including WebSphere Liberty, IBM Db2, IBM MQ, IBM Message Broker, IBM DataPower, and IBM API Connect.

Learn more

Check out Managing workloads.
Protect your existing investment as you extend, refactor, and migrate to the cloud.
Deploy IBM Cloud Private

Quickly deploy a private cloud platform with everything you need to get going including an application runtime, with monitoring and security services. You’ll be ready to run development environments, test environments and production environments for your enterprise applications.

SCALE TO MEET YOUR NEEDS

**Fully automated.** Enter a few commands, grab a cup of coffee, and keep an eye on the progress in the logs. Once deployed, you have a private cloud platform ready to develop, run, and manage your apps.

**Simple scalability.** Ensure that your applications have the resources they need. You can automatically add worker nodes as needed to increase the capacity of your private cloud.

**Air gap deployment.** Working in a highly secure environment? No worries. Deploy and run isolated from the public internet.

**Flexible platform options.** Bare metal, virtual machines, Power x86, Unbuntu, Red Hat OpenShift, zLinux, and more - IBM Cloud Private works in your heterogeneous environment.

Learn more

Show success early with quick wins! Start small and expand.

Scale your private cloud to what fits best!
Resilience

Your platform and applications must be highly available. You need a plan in place in case of disaster with established backup and recovery processes for all critical infrastructure, services, and data needed to run your application.

AVAILABLE WHEN YOUR USERS NEED IT

High availability and scalability. It starts with containerization. Detect issues and automatically provide failover. Increase capacity on demand.

Disaster recovery. Disaster recovery requires that an enterprise be proactive and think ahead to determine what is needed to recover when a disaster strikes.

Backup and restore. And of course! You must back up the application, the infrastructure on which the application runs, and the data needed for the application.

Learn more

Check out IBM Cloud Garage Resilience architecture. 
Make sure your apps are always available.
Enterprise integrations

Modernize your mission critical applications by moving them to IBM Cloud Private. Leverage your existing enterprise data stores or move them closer to the applications that will use them.

YOUR WORKLOAD. YOUR CLOUD. YOUR CHOICE.

Enable hybrid integration. A variety of services are provided to allow you to easily and securely integrate existing enterprise applications with IBM Cloud Private.

Protect your current investment. Use the enterprise middleware you need to run your business. Most IBM middleware can be quickly installed on IBM Cloud Private using Helm charts.

Private cloud access to public cloud services. Take advantage of public cloud services (such as Watson services). Choose to run your workload based on business needs.

Application modernization. Manage risk by choosing the right approach to modernize your current estate. Accelerate your journey through automation and technology.

Learn more

Check out IBM Cloud Integration.
https://www.ibm.com/cloud/integration
Containerized middleware and applications are key to moving to modern development and operations approaches.
Multicloud management

Organizations are adopting IT infrastructure and solutions from a wide range of cloud vendors. A hybrid and multicloud solution is quickly becoming the new normal.

MULTICLOUD IS THE NEW NORMAL

Visibility with automation and orchestration. By linking automation and orchestration in a central dashboard, you can gain visibility, manage resiliency, and reduce recovery time objectives.

Proactive management with insights. The integration of diagnostic, predictive, and key threat data can help you make better proactive decisions.

Multicloud and multicluster governance and security. Set consistent security policies across your environments and determine which clusters are compliant.

Flexibility. As your business and regulatory conditions change, so might your data protection policies. A software-defined approach can adapt.

Learn more

Check out the Multicloud management architecture.
https://www.ibm.com/cloud/garage/architectures/multicloudManagementArchitecture
Simplify multicloud management.

Multicloud management

On premises
- IBM Cloud Private
- Red Hat OpenShift

Off premises
- IBM Cloud (IKS)
- Other public clouds (EKS, AKS)

Multicloud is the key to organizational agility.
Security

IBM Cloud Private is built using IBM Secure Engineering practices and open security standards. Your private cloud platform is protected from internal and external security threats. Be confident that you are in command of your environment.

SECURE TO THE CORE

Open security standards. Based in NIST 800-53 with OIDD and OAuth built-in, including LDAP compliance.

Code scanning. A security scan is performed on all IBM Cloud Private source code prior to each release. You can use Vulnerability Advisor (provided with the platform) to scan the container images in your environment.

Penetration testing. Every IBM Cloud Private release is tested to prevent external incursions or attacks.

Incident response. Subscribe to security bulletins for alerts when new issues are discovered and obtain guidance on fixes or other remediation procedures.

Learn more

Check out IBM Cloud Security.
Protect what’s yours!

ye olde ID required
Monitoring & logging

Be confident that you know the total health of your private cloud. Using pre-built and personalized dashboards, you can visualize all aspects of platform and application health. From a common view, access secure integrated log information and use filters to investigate deeper insights.

FIND IT FAST. FIX IT FASTER.

**Next generation management tools.** As your private cloud grows, leverage the latest open source management tools that will scale right along with it.

**Integrate your favorite tools.** Use IBM Cloud Private next-generation management tools with your existing enterprise management tools in support of your alerting, logging, compliance, ticketing and other systems.

**Personalized dashboards.** Integrated monitoring, alerting and logging allow you to create powerful dashboards that ensure you see all platform and application logging in a common view, even as your cloud grows. Use pre-built prescriptive dashboards or build personalized dashboards to monitor your key performance indicators.

Learn more

Check out Service management for IT and cloud services.
https://www.ibm.com/cloud/garage/architectures/serviceManagementArchitecture
Stay up to date with platform dashboards.
Platform interfaces

A flexible approach lets you choose how to best interact and manage your private cloud platform. CLI and REST interfaces allow you to automate your DevOps tasks. To help you quickly visualize the status of the platform, a management console is provided out-of-the-box.

WE PLAY WELL WITH OTHERS

Management console. Obtain status of your platform using the management console. The console also graphically displays information provided by selected open source tools.

Multicloud management console. Get an aggregated view of your clusters including statistics, health, resources and performance.

Command line interface (CLI). Use the CLI to manage the infrastructure, applications, containers, services, and other resources. Dig deeper into platform details or create your own automation and scripts using the CLI.

Integrate with DevOps tools. Take advantage of your favorite DevOps tools via CLI and REST interfaces provided by the platform.

GET STARTED

Check out the IBM Cloud Private knowledge center.
https://www.ibm.com/support/knowledgecenter/SSBS6K_3.1.1/getting_started/introduction.html#gui
Manage your private cloud.

Manage your private cloud resources through the CLI and visualize your platform’s health with the management console.
Identity & access

IBM Cloud Private integrates with any LDAP directory service for identity management. Your LDAP directory defines the users and groups that are referenced in IBM Cloud Private teams, which are then granted access to IBM Cloud Private resources.

**TOTAL CONTROL OVER WHO GETS ACCESS TO WHAT**

**LDAP integration.** Bring your own LDAP directory. We can talk to your existing enterprise directory allowing you to manage all of your IDs, groups (teams) and passwords as you do today.

**Role based access control.** Access to resources is determined by assigning team membership roles such as Administrator, Operator, Editor, and Viewer.

**Namespaces and resource monitoring.** Kubernetes namespaces are used to manage resource access. Use namespaces to track resource usage across your teams.


Learn more
Maintain control over access to your private cloud.
DevOps

Using DevOps, business owners, development, operations, and quality assurance teams collaborate to continuously deliver software. The tools needed to enable DevOps are built right into IBM Cloud Private supporting cloud-native applications and cloud-ready traditional applications.

{BUILD; SHIP; RUN; REPEAT;}

Continuous integration. Use integrated tools (along with open source tools) for early error detection with improved collaboration. This leads to predictable delivery schedules.

Continuous delivery. To achieve consistent and reliable delivery, divide the delivery process into stages. Use your preferred pipeline tools to progress your application through the stages with minimal human intervention.

Automated operations. Use next generation management tools to eliminate manual steps and automate the creation of environments and the delivery of your code into production.

Learn more

Check out DevOps for accelerating the enterprise application lifecycle. https://www.ibm.com/cloud/garage/architectures/devOpsArchitecture
Seize market opportunities by reducing time to deliver.

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Commit Count</th>
<th>Build</th>
<th>Unit Test</th>
<th>Dev-Delay</th>
<th>QA-Test</th>
<th>Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mar 21</td>
<td>15:35</td>
<td>2 commits</td>
<td>1 sec</td>
<td>1 sec</td>
<td>24 ms</td>
<td>11 ms</td>
<td>45 ms</td>
</tr>
<tr>
<td>Mar 21</td>
<td>12:57</td>
<td>5 commits</td>
<td>1 sec</td>
<td>215 ms</td>
<td>239 ms</td>
<td>10 sec</td>
<td>Failed</td>
</tr>
<tr>
<td>Mar 21</td>
<td>8:05</td>
<td>2 commits</td>
<td>1 sec</td>
<td>1 sec</td>
<td>38 ms</td>
<td>9 ms</td>
<td>38 ms</td>
</tr>
</tbody>
</table>

Test result trend:
[Graph showing trend]
Developer experience

Get started quickly using Microclimate, which provides runnable scaffolding for Java, Node or Swift cloud-native applications. Regardless of what development phase you’re in, you’ll get real-time performance insights as you edit, build and run. You can take advantage of Microclimate capabilities whether starting from scratch or importing existing applications.

FREE DEV FROM THE MUNDANE. FOCUS ON WHAT MATTERS.

Lightning fast round-tripping. Use containerized development, rapid integration, intelligent feedback, web-based editor, embedded test harness, and a predefined pipeline to accelerate development.

Easy and predictable. Applications run in containers from day one to remove production differences. Be confident that your development and test environments mirror your production environment.

Intelligent feedback. Automated feedback on functional and performance test results. The feedback includes metrics to help you assess the quality of your code.

Learn more

A seamless experience from writing and testing code to building and deployment.
Notes:

Visit an IBM Cloud Garage
ibm.com/cloud/garage/services

Download IBM Cloud Private Community Edition, it’s FREE!!

Check out IBM Cloud Private on OpenShift
Explore the Private Cloud Architecture and take the 10-minute guided demo!!

ibm.com/cloud/garage/architecture/private-cloud

Learn about Multicloud management

https://www.ibm.com/cloud/garage/architectures/multicloudManagementArchitecture

* Free Book:
“Deploying Kubernetes in the Enterprise”
http://ibm.biz/BdYA4P
Check out the IBM Application Modernization Field Guide!!!

https://www.ibm.com/cloud/garage/content/field-guide/app-modernization-field-guide

*  

Get Book:

“The Cloud Adoption Playbook”, available on amazon.com

ibm.biz/cloud-adoption-playbook
Notices

© Copyright International Business Machines Corporation 2018, 2019.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user’s responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive, MD-NC119
Armonk, NY 10504-1785
US

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions; therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Statements regarding IBM’s future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

Trademarks
IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the web at “Copyright and trademark information” at www.ibm.com/legal/copytrade.shtml.