SOP: GCP VM Access (Linux & Windows)

1. Purpose

This SOP provides **quick, step-by-step guidance** for accessing Google Cloud Platform (GCP) Virtual Machines using **SSH (Linux)** and **RDP (Windows)**.

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2. Scope

Applicable to: - GCP Administrators - Cloud / Infra / DevOps Engineers - Operations & Support Teams

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3. Access Method Overview

VM OS	Access Type	Authentication
Linux VM	SSH	SSH Key Pair
Windows VM	RDP	Username & Password

Note: Access depends on the **target VM OS**, not the client OS.

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4. SSH Key Management (Linux VMs)

How GCP Handles SSH Keys

- SSH public keys are stored in:
- **Project metadata**, or
- **Instance metadata**
- GCP injects the public key into the VM
- SSH validates the private key during login

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5. Linux VM Access

5.1 Using GCP Console

1. Login to **Google Cloud Console**
2. Navigate to **Compute Engine → VM instances**
3. Click **Create Instance**
4. Choose a **Linux image**

5. Under **Security → SSH Keys**:
6. Add SSH public key, **OR**
7. Use browser-based SSH
8. Create VM

Connect:

```
gcloud compute ssh <vm-name>
```

5.2 Using gcloud CLI

Login:

```
gcloud auth login
```

Create VM:

```
gcloud compute instances create my-linux-vm
  --zone us-central1-a
```

Connect:

```
gcloud compute ssh my-linux-vm
```

> **Note:** If no SSH key exists, GCP **automatically generates and manages** the key pair.

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6. Windows VM Access

6.1 Create Windows VM

- Select **Windows Server image** during VM creation
- Complete VM setup

6.2 Retrieve Credentials

Console: 1. Go to **VM instances** 2. Select the Windows VM 3. Click **Set Windows password** 4. Retrieve username and password

CLI:

```
gcloud compute reset-windows-password <vm-name>
```

6.3 Access Windows VM

- Use **Remote Desktop (RDP)** client
- Login using retrieved credentials

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7. Supported Client OS

- Linux → Linux VM (SSH)
- Windows → Linux VM (SSH)
- macOS → Linux VM (SSH)
- Any OS → Windows VM (RDP)

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8. Security Best Practices

- Enable **OS Login** for centralized access control
- Avoid project-wide SSH keys
- Rotate SSH keys regularly
- Prefer **IAP (Identity-Aware Proxy)** for secure access
- Restrict firewall rules (SSH: 22, RDP: 3389)

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9. Troubleshooting (Quick Checks)

- VM is in **RUNNING** state
- Firewall allows SSH / RDP
- Correct zone and VM name used
- OS Login permissions assigned

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10. Summary

- Linux VMs → SSH key-based access
- Windows VMs → RDP with generated credentials
- GCP manages SSH keys automatically when using gcloud

End of SOP