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Q13

Discuss the advantage and security implication of cloud hosting of servers vis-a-vis in house machine based hosting for government business.

UPSC Civil Services Mains 2015 · GS III · 12 marks · Indian Economy

Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment.

Core demand of the question

- Compare advantages of cloud-hosted servers with in-house machines for government work
- Discuss the security implications of both models and a safe way to choose

Revision summary

Cloud hosting cuts idle hardware cost and makes scale, patching, and disaster recovery easier for ordinary government work.

In-house hosting still fits air-gapped and highly classified systems.

Cloud risks are **multi-tenancy**, key control, data location, provider insiders, and lock-in.

In-house risks are unpatched boxes, weak rooms, and no second copy.

Use GI Cloud with government keys for most data; keep secrets on dedicated government infrastructure.

Flow diagram

Government business -> Empanelled cloud

Government business -> In-house rack

Empanelled cloud -> Scale backup opex

In-house rack -> Physical control secrets

Keys location CERT contract -> Empanelled cloud

Patches backup access -> In-house rack

Conclusion

- **Classify data: public and ordinary personal data** on empanelled GI Cloud; **secret and above** on dedicated government cloud or in-house with **NIC**-grade ops.
- Use **MeghRaj**, encryption with government-held keys, and Indian legal jurisdiction for citizen databases.
- Ban unapproved public foreign clouds for official files; allow them only for open websites if policy says so.
- Train a small **cloud security cadre** and run annual drills with **CERT-In**.

Cloud hosting gives government elasticity, professional backup, and lower idle capital. In-house hosting gives physical control for the most secret work. Security is not automatic in either room: cloud needs keys, location, and contracts; in-house needs patches and backups. A classified split on MeghRaj-class clouds is safer than every ministry running its own forgotten tower.

Facts & figures

GI Cloud / MeghRaj

Government of India's cloud initiative to host departments on shared, empanelled infrastructure instead of scattered server rooms.

NIC

National Informatics Centre, the long-standing public host of many Union and State applications and data centres.

Multi-tenancy

Many customers share the same physical cloud fabric; isolation and encryption must stop one tenant from seeing another.

CERT-In

Indian Computer Emergency Response Team, the national agency for cyber incident reporting and coordination.

Data sovereignty

The principle that citizen and official data should stay under Indian law and, for sensitive sets, on Indian soil.

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